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Original Articles.

AUTO-TOXEMIA AS A FACTOR IN THE NEUROSES.

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The doctrine of auto-intoxication is a very old one; the central idea of the primitive conception survives in the term rheumatism, applied to a condition due to the auto-intoxication resultant on suboxidization. Many of the morbid states now regarded as auto-toxemic were of old charged to rheums, as the products of rheumatism. Obesity and allied states were placed in the sixteenth century in the nosologic position they occupy to-day. In Sydenham's time the effects of these conditions were even better recognized than during the middle decades of the nineteenth century. Sydenham pointed out that suppressed gout (that is, gout without joint expression) exercised marked influence on the constitution. The body, he remarks, "is not the only sufferer and the dependent condition of the patient is not his worst misfortune. The mind suffers with the body, and which suffers most is hard to say. So much do mind and reason lose energy as energy is lost by the body, so susceptible and vacillating is the temper, such a trouble is the patient to others as well as himself, that a fit of gout is a fit of bad temper. To fear, anxiety and other passions, the gouty patient is a continual victim; whilst as the disease departs, the mind regains tranquillity." He also pointed out that gout affected the throat, heart and lungs as in asthma.

Upon the auto-intoxication doctrine was based the therapeutic principle underlying blood-letting. This aimed to remove the materias morbi and so replace blood by water as to carry on the circulation. The principle laid down by Sangrado (Le Sage's caricature of the phlebotimizer) was to drink water in great abundance as a universal menstruum which dissolves all kinds of salts. Plentiful bleedings and frequent draughts of water were to Sangrado the secret of health.

Auto-intoxication states existed to an enormous degree before the days of fresh winter vegetables, and formed the basis of most of what were called scorbutic disorders. For these reasons "spring cleaning," as it is called, still survives in popular medicine. In rural Italy the practice still obtains of bleeding in the spring and using water infusions of purgatives.

The practical adoption of the germ theory (which has hovered over the profession for two centuries) in the early eighties of the nineteenth century, turned attention, through discovery of the toxin, to the allied products formed in the system without bacterial action. Nearly simultaneous with this came the demarcation of neurasthenia by Beard, with the consequent study of fatigue and its results. Fatigue was found to produce auto-toxemia in two ways: First, by the direct products of nerve waste, and second, by the fatigue of the organs of sanguifaction and elimination from overwork after the loss of inhibitions, from central nerve tire. What were considered pathologic results, dependent on a specific lesion in a special location, were shown to be due to weakness of inhibito-motor centers, with resultant overwork of excito-motor neurons and the ultimate fatigue.

In this way occurred the fatigue fever pointed out by Vaughan and others. Fever, as Ott affirms, is primarily set up by an increase of heat production beyond that of heat dissipation, an agent from within or without deranging the harmony of the thermotaxic, thermogenetic and thermolytic apparatus by which in the initial stage the metabolism of the tissues is usually temporarily increased, this increment being greater than that generated upon a restricted amount of nutriment.

Once established, the fever continues, not from excessive production, but from an altered relation between heat production and heat dissipation. Fever is not a fire kept up by an excessive oxidation of the constituents of the economy. Heat production may be subnormal, yet the bodily temperature be at high fever heat. The thermotaxic centers of the brain so maintain balance between heat production and heat dissipation as to keep the temperature at 98.4 F. In fevers these thermotaxic centers are disordered so that the relation between heat production and heat dissipation being disturbed a higher temperature results. The peripheral endings of the sensory nerves influencing a thermolytic center are, therefore, important factors in heat regulation.

From disturbance of the thermic balance consequent to nerve shock or allied conditions, results the auto-intoxication state underlying saburral fever. This begins with loss of appetite, which may be gradual. The tongue is large, white and dirty; the mouth is clammy; the breath is fetid; constipation is habitual. The patient is languid, feeble, indisposed for work. The discomfort augments after each attempt to take food. Febrile paroxysms preceded by chills and followed by sweating often supervene. Sometimes jaundice and hepatic enlargement are present. Under the influence of overwork, emotion, exposure to cold, etc., arrest of digestion, nausea, vomiting, headache, chills and fever occur. In children and neurotics vertigo and convulsions often usher in and accompany the disease as an expression of the general toxemic condition. There may be a week's fever nearly resembling a mild typhoid. Sometimes after one or more attacks a chill occurs, followed by

fever; profuse evacuations set in and convulsions rapidly ensue. There is generally constipation from the first. Even when there is diarrhea the natural evacuation may be insufficient for elimination.

The foregoing condition, which occurs generally without the fever, marks the onset of auto-toxemia and is an expression of the constitutional disturbance resultant on non-elimination. The hepatic involvement has a double expression. The liver has a poison-destroying, eliminatory function, and acts as a sanguifacient. Disturbance of either of these tends to produce auto-toxemia.

The various products produced through normal work are eliminated by various channels. Some are transformed in the alimentary canal into innocuous substances. Gases are eliminated by the lungs. Other compounds are intercepted and decomposed in the liver. Certain effete products are eliminated by the kidneys and skin. When any one of these emunctories is interfered with in discharge of its functions the phenomena of auto-intoxication make their appearance. This is observed in certain affections of the alimentary system attended by headache, pallor, nosophobia, etc. These manifestations, the result of a chronic auto-intoxication, were not improperly attributed by the older writers to disturbance of hepatic functions.

The symptoms of auto-intoxication are often those of profound systemic depression, but they likewise, as already stated, present convulsive and exciting types. Nearly four decades ago Meynert suggested that epileptic attacks were due to an unstable nervous system acted on by the accumulation of a proteid toxic substance. This view was subsequently corroborated by the researches of Brieger, Bouchard, Féré and others on the toxic state of the urine antecedent to the epileptic state.

What is usually a congenital condition in the epileptic may be an acquired state from prolonged auto-toxemia, in which a sudden increase of auto-intoxication may excite centers whose inhibitions have already been weakened. This acquired predisposition is a temporary diathesis established in the manner described by Bouchard. Nerve reactions by corrupting for the moment nutrition not only produce the morbid opportunity, but may also modify nutrition in a lasting manner and develop diathesis. The acquired diathesis once established may become hereditarily transmissible in its etiology: be it in the individual or his ancestors, it has had for its origin the abnormal play of nerve reaction. Let a bad alimentary hygiene, cold and moisture, privation of air and light cause an infant to become lymphatic, and let the permanence of the same cause keep up the nutritive disorder which is designated as the scrofulous diathesis; or let a young man, by hygienic errors, by the abuse of the table, by protracted studies at night, by venereal excesses, by nervous shock, which may be the consequence of complete derangement of the mind as also of a jaded brain, develop this other nutritive disorder designated arthritism—in both cases each cell will have a tainted nutrition and will produce cells that maintain the same nutritive type. Among these cells are the generative elements; in their turn they give birth to the cells of a new being with nutritive activity similar to the individual which has begotten it. The acquired diathesis has become hereditary. It does not have for its cause in the descendants the vice of their own nerve reaction; in them, the diathetic state really arises from nerve perturbation experienced by their ancestors. There are, therefore, two factors to be reckoned with in auto-toxemia: the acquired diathesis and the effects on this of increased toxemia.

Relief from the ordinary effects of imperfect elimination is often very great so far as its expression in consciousness is concerned. In early life, as Havelock Ellis remarks, the emotions due to forced repression of excretions are frequently acute in the highest degree, and the joy of relief is correspondingly great. In adult life, on most occasions, these are pushed into the background of consciousness, partly by training, partly by the fact that involuntary muscular activity is less imperative in adult life, so that the psychic element in connection with ordinary excretions is almost negligible. In many cases, however, the balance of adult consciousness is disturbed by irritations from auto-toxemia that relief from these produces a buoyancy out of proportion to the amount of elimination secured. In the adult the majority of functions cease to find expression other than in subconscious states.

Making up what is called consciousness are a number of clear conscious states, accompanied by others less clear and by physiologic states which, though not entering into consciousnesss, are even more potent than the conscious states. These last would be the first affected by auto-intoxication. The morbid irritations resulting therefrom obtrude on consciousness, producing anxiety and uncertainty. These morbid irritations of physiologic states produce the two great conditions ordinarily found as a result of auto-toxemia. The first is what the older clinicians called nervous adynamia and ascribed not only to the essential fevers, etc., but also to auto-toxemia.

From these two states, the conscious and the psychologic, the first an irritable weakness, the other a deep-seated constitutional neurosis, result the various conditions of temporary or protracted disorder charged to auto-toxemia. The two conditions are predisposing factors of almost distinct value. One type disturbs the balance of health so that it is easily upset and easily recovers. In the deeper type a secondary condition to auto-toxemia has been engendered, which, like all conditions influenced in their action by causes secondary to a great primary origin will not yield to treatment of this primary cause alone. This latter condition, like chronic nutritional disturbances, set up by syphilis, by the exanthemata, and by other diseases in which the nervous state or the nutritional disturbance remains long after the primary cause has disappeared, acts as a predisposing neurosis.

All these morbid states and prolonged auto-intoxication produce a protracted neuropathy with suspicional and anxious tendencies. This condition mimics all the chronic neuroses and is often taken for them, whence the frequent cures of conditions like tabes by quack systems and medical pretenders. To a certain extent the period of attack gives a complexion to the clinical picture. A very common type between 25 and 45 is a disorder mimicking locomotor ataxia and often accompanied by convulsive attacks. In such cases even physicians not unnaturally give an erroneous prognosis. Lightning-like pains of locomotor ataxia are simulated by temporary darting pains, partly of psychic origin. As the existing auto-toxic state aggravates any effect of eye strain and even produces these, in certain cases examination of the eyes often reveals conditions mistaken even by ophthalmologists for the preliminary stages of optic atrophy. As the reflexes are often as exaggerated in this condition as they are in the earlier stages of loco-

motor ataxia, an error in diagnosis is always possible. The variations in the mental state of this class of cases requires but little to pass over into the confusional types of insanity, which, indeed, were the earliest directly charged to auto-intoxication. The most frequent type presented is that of acute confusional insanity. This was the case with those which Schroeder van der Kolk, decades ago, demonstrated to be due to fecal accumulation in the colon. In some cases melancholia is produced. The urine of these has been found to produce stupor and depression in animals. The urine from confusional cases produces stupid excitement and violence. Exceptionally emotional exaltation may occur, producing extravagant actions, thereby creating a suspicion of paretic dementia. A very frequent type produced by railroad travel aggravating auto-intoxication is a stupid hallucinatory violence, which disappears in a very few days after rest, the use of stimulant enemata and hypnotics. This type often occurs in persons of either sex traveling on their honeymoon.

In many cases charged to mental shock auto-intoxication is the dominant cause, which is often due to the inhibitory effect that mental shock has produced on the liver and kidneys, causing the latter to secrete only the clear, pale urine of nervous agitation. The cases of transitory frenzy, with their wild, brief, unremembered violence, charged to mental shocks, are really due to auto-toxemia. The gynecologic conditions ascribed by Goodell to nerve-tire are produced through intervention of auto-toxemia in the manner already described.

The most common symptoms of this form of nerve-tire are the very ones which lay tradition and dogmatic empiricism attribute to womb ailment. They are in the usual order of their frequency: Great weariness and more or less of nervousness and of wakefulness; inability to walk any distance, and a bearing-down feeling; then headache, napeache and backache. Next comes scant, painful, delayed or suppressed menstruation, cold feet, and an irritable bladder, general spinal and pelvic soreness, and pain in one or both ovaries. The woman, always tired, spends the day tired, goes to bed tired and wakes up tired, often, indeed, more so than when she fell asleep. She sighs a great deal, has low spirits, and often fancies that she will lose her mind. Her arms and legs become numb so frequently that she fears paralysis. The skin becomes dry, harsh and scurfy. Pigmentary deposits appear under the eyes, around the nipples, and on the chin and forehead. Blondes get mottled in complexion. Brunettes are disfigured by brown patches or by general bronzing. Sometimes the whole complexion changes to a darker hue, while a disfiguring growth of hair appears on the face. A physician, especially if the patient has backache, bearing-down feeling, an irritable bladder, and pain in the ovaries, is apt to hunt diligently for a uterine lesion. If one be found, no matter how trifling, he will attach to it undue importance and treat it heroically as the erring organ. If no visible or tangible disease of the sexual organs be discoverable, he will lay the blame on the invisible endometrium or on the unseeable ovary and continue the local treatment. In this connection it should be remembered that menstruation to a certain extent is eliminative, and that interference with it causes retention of toxic elements.

Even where the bowels seemingly move freely in constipated individuals elimination is very imperfect. The solid urine of these patients causes, as Spallaci long ago discovered, stupor, asthenia, tremor, tetanoid symptoms and hypothermia, followed by hyperthermia when inoculated in animals. Improvement in elimination removes from the urine the factors producing these conditions. The urine of amenorrheic or dysmenorrheic women, not obviously suffering from constipation and having seemingly free movements of the bowels, present similar qualities. Mental states in women or nervous men are peculiarly apt to disturb primarily the genito-urinary apparatus and secondarily the hepatic and renal. Thus jealousy often evinces itself first in bladder disturbance, later in slight jaundice and symptoms resembling gallstone colic.

These symptoms, according to Lepine, are very frequent in women and in nervous men after emotional disturbances. They are extreme expressions of auto-toxemia due to emotional disturbance. The fact is generally ignored but none the less clinically evident that nerve-tire and auto-intoxication work in a vicious circle. Here the influence of secondary casual factors, as often ignored in etiologic pathology, is evident. This is peculiarly obvious in nervous conditions due to errors of refraction and curable by proper glasses in an early stage. Here the influence of auto-intoxication in producing the headaches is shown in disappearance of the symptoms under treatment directed against the auto-intoxication alone. In a class of cases the supra-orbital headache of eye strain is combined with vertical and suboccipital headache. Here, although considerable astigmatism be present, all the headaches disappear under treatment for auto-toxemia. The underlying condition has not been removed, and, unless the astigmatism be treated, will soon cause auto-intoxication at the proper etiologic moment, attended with recurrence of the headaches.

The same is true of aural, rhinologic, laryngologic and pharyngeal states. Adenoids in children, for example, bring about constitutional disturbances, producing auto-toxemia through continued strain on the nervous organism. The nose, through its erectile tissue, having nerve relations to the erectile sexual systems, and, through the large extent of the olfactory nerve, may be irritated by the attempts at elimination through mucous membranes. This irritation, by exciting the nerves concerned, unduly increases the nerve-tire of the central nervous system and thereby the auto-intoxication. Pathologic sneezing is often an expression of this, and similar influences play a part in the auto-toxemic laryngeal and pharyngeal vertiginous states so frequent in auto-toxemics. The irritations of these regions often occasion the undue cardiac stress which expresses itself in pseudo-anginas. Pelvic irritations of the female produce in a similar manner severe constitutional states. This is why women with severe pelvic disorder who have become insane recover without other treatment than removal from home surroundings and treatment of the auto-toxemia.

The predisposing cause, however, in these aural, laryngologic, rhinologic, pharyngeal and gynecologic conditions remain to set up recurrences of auto-toxemia and its consequences if untreated. Preparation for special procedures often imply treatment of auto-toxemia, which treatment predisposes remarkably to the benefits seemingly effected by operation. Very much of what is charged to reflex causes is really due to strain producing auto-toxemia little by little.

The pure type of auto-toxemia which underlies many of the so-called reflex states was recognized by the older clinicians as fecal anemia and treated on eliminative and roborant principles. The milder states resultant on auto-toxemia are generally of local expression like irri-

table bladder, various neuroses, unilateral headache, and neuralgic irritations about the gums and teeth, together with dermatoses like angioneurotic edema and hives, disordered rhino-laryngologic conditions, local fleeting pains, etc. The severe types may vary from fecal anemia to conditions simulating chlorosis, neurasthenia of the ordinary type and of types mimicking tabes, transitory frenzy, melancholia, acute confusional insanity, stupor, amnesia, emotionally exalted states, and sometimes epileptiform attacks resembling grave hysteria, but accompanied with partial or complete loss of consciousness.

One unpleasant and frequent mental state in otherwise logical auto-toxemics is nosophobia, or worry over the possibility of disease. This differs from hypochondria in the fact that the subject does not think he has a particular disease, but fears he may have. The irregular action of his organs resulting from auto-toxemia intrudes on his consciousness and causes a fear or uncertainty as to his actual state. That paretic dementia and tabes are often due to the toxin of syphilis is now generally admitted. The clinical history of some cases would indicate that auto-toxemia has here played its part more especially, as it has been demonstrated beyond cavil that temporary auto-toxemic neuroses mimic these two great constitutional disorders. The fact is but too often forgotten that the law of periodicity of the nervous system fixes a tendency of certain symptoms to recur from a slighter exciting cause. Hence, frequently recurring auto-intoxication causes that breakdown of the vasomotor balance which constitutes the underlying basis of tabes and paretic dementia.

Diagnosis in conditions of auto-intoxication is, therefore, not so simple as it first seems. Owing to the tendency of the neuroses with an underlying vasomotor factor to remit or assume temporary appearances of health, the distinction between the deep forms of auto-intoxication and these neuroses becomes at times difficult. This difficulty is intensified by the fact that auto-intoxication, in a hereditarily defective or acquired neuropathic constitution, may cause marked and decided symptoms of less augury than when found in a healthy constitution. Auto-intoxication occurring in puberty often temporarily initiates seemingly serious puberty neuroses and psychoses. The same is true of the climacteric end of the senile period. In all these cases the condition produced by auto-intoxication has the clinical tinge of the period in which it appears. This is why treatment directed to a change of environment and the habits of the individual so often produces favorable effects on seeming senile and climacteric breakdown.

The grave auto-intoxication resembling tabes and allied conditions are differentiated as a rule by the state of the reflexes as to absence of stupor, melancholia and acute confusional insanity, as well as amnesia, and differ little from the ordinary types except in their comparative quickness of response to treatment. This, however, is only a relative test, since in no case of these affections is auto-intoxication absent as an etiologic factor. The convulsive types of auto-intoxication differ from epilepsy in their infrequency and absence of recurrence. Practically the status of the auto-intoxicated is as brief as that of the epileptic is prolonged.

The therapeutics of auto-intoxication will depend on the type. In irritable weakness, while removal from surroundings is desirable for permanent recovery, much may be attained by regulation of diet, use of the mineral waters, regular, moderate exercise and massage, as well as hydrotherapy. Here, as in all cases of auto-intoxication, the great need of the system is water, and it should be amply supplied, whether in the form of mineral waters or ordinary water, or large quantities of milk. Purgatives require very careful adjustment; both aloetic and the cascara purgatives tend to produce congestion of the hemorrhoidal veins with resultant irritation. In old people salines must be used cautiously. In no small number of cases of irritable weakness a small dose of a mercurial followed by a morning saline acts rapidly and very beneficially in securing elimination, which is what is needed, not simple purgation. In the deeper type removal from home surroundings and conditions is imperatively indicated. In addition to dietetics, hydrotherapy, elimination and exercise, faradism and franklinization along the spine are often found necessary and valuable. The indication in this type for the use of water is no less imperative than in the first type. The patient, however, has an intense repugnance to water, as a rule, and to secure its use the physician will need much ingenuity.

One phase of auto-intoxication which has received less attention that it deserves is the pseudo-angina which so frequently occurs. Sometimes, albeit very rarely, death has occurred from this. This condition is due to the primarily increased inhibition of the heart, succeeded by increased power of the excitomotory ganglia of the heart with resultant irregular action. From this often results the emotional exaltation, depression and suspicional states found in auto-intoxication of brain and heart. It is readily comprehensible how these irregularities tend to increase each other. Independently of the condition just described, cardiac irregularities occur in auto-intoxication from arterial tension due to the character of the blood. Inevitable renal and hepatic disturbances occur, whence the temporary albuminuria and glycosuria.

The phenomena of arthritis deformans bear a marked resemblance to the trophic changes of tabes, and it is by no means improbable that they are sometimes due to the two states produced by auto-intoxication. The chronic type has so deranged the trophic mechanism that irritation changes result from the products of auto-intoxication. The influence of these factors can be shown experimentally by section of the sciatic nerve in rabbits and the injection of irritating material above the center of the body. As a result the side of the sciatic nerve section is attacked by arthritic changes like those of arthritis deformans.

THE USES OF TUBERCULIN.*

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When Koch had announced the discovery of tuberculin and the world was agog with expectations for the new cure of tuberculosis, this sign was said to have been posted upon the shop of an ambitious barber in Switzerland: "Corns treated and tuberculin given here." What was the conception of that barber as to the intricate nature of the remedy and the delicate shades of disease which were suited or unsuited to its use, it would be difficult to state. The case of some physicians who, under the assumed authority of professional proficiency, deal in borrowed criticisms of everything that pertains to the subject of this paper, is a little less inexplicable. A criticism to be of weight should be based upon a reasonably complete personal knowledge.

* Read before the Congress on Tuberculosis, Medical Section, held in London, July, 1901.

If I can succeed in clearing away any of the clouds which befog this subject my object in presenting the following remarks upon my own experience will have been accomplished.

We will divide the uses of tuberculin into two parts: 1, diagnostic, and 2, immunizing.

The diagnostic powers of tuberculin are now generally recognized and much better understood than the immunizing. However, we shall learn that they are not so very different from each other as the separate purposes of their employment would seem to signify. The diagnostic effect seems to depend upon what comes out of the bacilli, i. e., the quality that resides in the culture fluid in which they have grown, while the immunizing property seems to center in the bodies of the germs, as Koch determined with his new tuberculin (R).

This diagnostic effect has thus far constituted the chief use of tuberculin, i. e., the glycerin extract originally termed "lymph." The method of manufacture is to concentrate the glycerin culture fluid at ordinary boiling temperature down to one-tenth its original bulk, after which it is filtered through porcelain. It thus contains various substances, namely, a combination of toxins and proteids capable of producing intense reaction in living tubercular tissue. It includes 50 per cent. glycerin—beef extract—beef peptones and salts, and small quantities of the specific tubercle bacilli proteids which are liberated during the growth of the culture and during the process of the boiling and concentration of the fluid.

As to the chemical constituents of this reactionary material, we will let very good authorities explain. Drs. Vaughan and Cooley[1] say: "In fact, it may be safely said that in no case has the chemical nature of the essential toxin of any of the pathogenic bacteria been shown."

They instance Buchner's investigations on pus-producing substances in bacterial cells, stating his conclusions that there is nothing in the whole category of decomposition products, caused by bacteria, to account for the phenomena of general infectious diseases, but that the cause of these must be looked for in the albuminates of the bacterial cell itself, and that in some cases, at least, these poisons are only set free on the death and dissolution of the bacterial cell. By this theory he explains the fact that suppuration may be caused by dead cultures of germs which, when living, have not the pyogenic property.

As to the modus operandi of this reactionary effect we are not quite so much in the dark. It seems that there is a specific stimulation of the defensive cells of the body with reference especially to infected areas, and in proportion to the sensitiveness of the nervous system, the blood supply and advanced degree of said infection. The circulation of the blood in the lungs, being proportionately more active for a given area (than for any as large portion of the periphery of the body), the most sensitive and active effects may be looked for in pulmonary tissue. The increase of the number and flocking to the affected area of leucocytes and phagocytes constitute the specific effect which has not yet been similarly shown to occur with the use of any other substances, such as cinnamic acid, oil of cloves or peppermint, nuclein, etc., which are capable of increasing general leucocytosis.

This effect may be so great, with too far advanced infection, as to produce a choking off of nearly destroyed tissue; a necrotic process is thus carried to an extreme, and grave problems of elimination are forced upon the animal economy as a result. It is not, however, these extreme effects with which we intend to deal. They are always and especially to be avoided.

Hueppe[2] says: "When a local disturbance occurs as a consequence of paracytic invasion, then a reactive inflammation with the formation of a limiting wall of leucocytes takes place, an event that must be considered as a natural healing process and that often ends in recovery." "Ribbert asserts that this surrounding mantle of white blood corpuscles prevents nutrient material and oxygen from reaching the bacteria, but perhaps also the white blood corpuscles disintegrate and so become chemically active in the way pointed out by Hankin."

All of this serves to explain how intimately associated are the diagnostic and the immunity effects of tuberculin. In fact, the latter process, the therapeutic effect, is diagnostic all the way through, so relative is it to the degree and to the results of infection, and so dependent is it upon the resistance and environment of the human body. Diagnostic proficiency, then, of a discriminating and far-reaching kind, is the key to success in handling this remedy. Observance of technique is also essential.

The size of the dose hypodermically given for diagnostic purposes varies with different experimenters who give different reasons for the course they pursue. Some prefer to give very small initial doses with intervals of two or three days between. The liability is that they will create a tolerance and so miss the mark, the temperature rise or reaction they are after. Others prefer to give a single large dose similar to the plan pursued by veterinarians with cattle. The danger here is the possibility of getting too severe a reaction for the case in hand. The suspicions or expectations of physicians, as regards the possible existence of infection, varies so greatly that some would use this test when as little or less than one milligram would cause a reaction in an adult. In such cases I think we ought to be able to determine the diagnosis without the test. So the diagnostic dose has varied, I should say, from one to thirty milligrams (or of a 1 per cent. solution, approximately 2 to 45 minims) of the crude tuberculin—Koch. I prefer myself to follow a middle course between the above extremes and start with what I expect may be an effective dose and daily increase it. Let it be cumulative if it must be. We thus approach the reactionary point and learn much of the degree of infection. Each morning give a dose approximately double that given the previous day till you reach 20 or 30 milligrams, if you do not get conclusive evidence of infection before that time. The size of the initial dose must depend upon the physician's suspicions of infection, the age, sex and susceptibility of the subject. The individual sensitiveness of certain patients to this reaction is an important phase of this matter. I have obtained reaction to one milligram in a male adult and had to reach 20 mgs. before getting the same evidence in a female, with both of whom the after-course and treatment apparently proved the correctness of the diagnosis.

Therefore, the initial dose for a child or susceptible young woman, I would place at from 1 mg. glycerin extract of tuberculin,[3] up to 5 or 6 mgs. (or 9 or 10 minims) for an adult male, and each day nearly double the previous day's dose, as before described. If the patient has kept a temperature record (taken at say 9 a. m., 1, 4 and 8 p. m.), for two or three days previously,

1. The Bacterial Toxins. Drs. Victor C. Vaughan and Thomas B. Cooley, JOURNAL A. M. A., Feb. 23, 1901.

2. "Principles of Bacteriology," page 363.

3. Standardized, as obtained in America, through Victor Koechl Co., N. Y., or the Bacterio-Therapeutic Laboratory at Asheville, N. C.

any habitual rise can be accounted for. I prefer a morning hour for the test injections, because if an evening hour is chosen a sudden rise of temperature may be missed during sleep. This rise may come in four hours, if the tubercular lesion is centrally located in the lungs, or at a much later time if located in other organs or in the joints. If it happens to be incapsulated in far off glandular structure, the response may be slower still, very likely manifesting itself the following day. Any suspicious but not definitely conclusive reaction may indicate the wisdom of waiting over a day or two, and then a larger dose will determine the genuineness of the effect.

We are by no means limited to the temperature curve in determining that a reaction has taken place. A temperature rise does not uniformly occur, and it may be subordinate to the systemic effect. The latter is much like the sensation of the oncoming of an attack of la grippe. In fact, it is sometimes difficult to eliminate la grippe if that disease happens at the time to be prevalent. Besides the systemic reaction there is the local effect in even slightly affected lung tissue, perhaps previously undetected, and one which occurs earlier there than in an advanced stage of localized disease in the same lung. This is the most helpful diagnostic indication to be obtained from the test. But one must have the discriminating ear and stethoscope to appreciate it. This, I think, is a result of the specific action of the tuberculin, stimulating as it does leucocytosis at the point of injury. The effort at repair being accompanied by a certain amount of infiltration and congestion of the slightly affected tissues, produces a higher pitched-breath sound than normal, more puerile and bronchovesicular, which is quite characteristic. The local reaction is also a possible guide to the direct method of immunization, which will be considered later on.

We have not time here to discuss at length the claim that other diseases, as syphilis and leprosy, likewise respond to this tuberculin test. The uncertainty of the relation of these diseases to tuberculosis, and the very general existence of the tubercular dyscrasia (or latent tuberculosis) in the human family, shrouds the whole question in doubt, warranting a verdict for the test; that is, where the test works affirmatively it is nearly always safe to assume at least latent tuberculosis exists.

These uncertainties (the difference in dose and technique employed by different observers) may account for much of the discrepancy in positive results obtained, which amount to from 60 to 100 per cent.,[4] positive or affirmative diagnoses. My own cases, including quite suspicious cases, but only such as it was deemed could not otherwise be proved to be tubercular, have given about 90 per cent. positive results. I think only 5 out of 46 were shown to be negative.

The test is of interest and very helpful to us in forestalling active tuberculosis at the very time when a cure is possible. It, as Petrusky asserts, has "the power of disclosing the presence of unsuspected foci of tuberculosis," which makes it a peculiarly valuable diagnostic resource. It is safe and no harm need come from its cautious employment.[5]

4. J. M. Anders: JOURNAL A. M. A., Jan. 12, 1901. "The Diagnosis and Treatment of the Prebacillary Stage of Pulmonary Tuberculosis;" 3683 cases in which this tuberculin test has been made by different physicians with an average of 78 per cent. positive reactions.

5. Petrusky: Vortraege zur Tuberculosis-bekampfung, Leipzig, 1900. Writer cites the discovery by Schreiber "that newborn children during the first week of life did not once react to this diagnostic test, to which a great number were subjected." This should not only strengthen our confidence in the reliability of this diagnostic method, but also weaken the claims of those who believe in the possible congenital transmission of the disease.

IMMUNITY-PRODUCING QUALITY.

The subject of the immunity-producing quality in tuberculin is next in order. The need of discovering this protective principle and separating it from the crude tuberculin has been appreciated, but the problem has not been an easy one. It remains to be learned whether all has been done that is possible. Koch thought he had reached the goal in his new tuberculin—R. But the crudeness of this necessarily doubtfully perfect emulsion—though we admit it to be a simple substance made from the bodies of the bacilli—did not favorably impress cautious experimenters. However, some of the healing or immunizing property seemed to have been determined, as above expressed by Buchner, "in the albuminates of the bacterial cell itself." We will return to the consideration of this remedial agent after describing the various preparations.

Lack of time and the desire not to confound the indirect with the direct tuberculin method, must be my excuse for not here fully considering the former—the antitubercular sera.

I am aware that the possibility of transmitted tuberculin being proved to be the therapeutic principle in these animal serums may give color to the claim that they and the direct tuberculins should all be considered under one head. Yet the uncertainty of these sera from their lack of standardization and from the variety of elements which have to be included in their manufacture is objectionable. The amount and virility of the toxin administered to an animal, and the time and resistance required to change it to a possible antitoxin—as it is supposed to be done in diphtheria—are questionable elements, which require too much abject faith in the commercial side of this matter to gain full confidence. In view of the questionable composition of an antitubercle serum it might be well to heed Ferdinand Hueppe's warning when he says of the antidiphtheric serum: "There is serious disappointment in store for us if we do not succeed in ridding ourselves at once of the fallacy regarding the absolute harmlessness of the antitoxins." Until we know exactly what we have in these sera, let us not confound the serum with the tuberculin treatment. We can at least assume the two to be different and not interchangeable.

After the crude tuberculin, or glycerin extract, we have Koch's tuberculin (R), previously mentioned.

Then we have Kleb's tuberculocidin, one of the first efforts to improve on the crude tuberculin,[6] but it is of questionable utility because probably too much of the toxin is eliminated.

Antiphthisin (Kleb's) is very similar, except instead of being produced from tuberculin it is obtained from the culture fluid upon which the tubercle bacilli have been grown, without the application of boiling heat for concentration. This was thought to preserve in the material an immunizing property in the proteid which power would have been destroyed by boiling, otherwise this preparation is treated and standardized the same as tuberculocidin.

6. It is made from tuberculin by precipitating with an alkaloidal reagent (usually the sodic iodid of bismuth) throwing down many of the albuminoids which are contained in the culture fluids; the precipitate is filtered out and then the filtrate is further treated with an alkali, for the purpose of precipitating the reagent used in the first place, and is again filtered. The clear fluid is then treated with absolute alcohol—obtaining another precipitate which is collected upon a filter dried and redissolved in distilled water. Standardization to 1 per cent., this liquid contains proteids from the beef extract and peptones; it is, however, free from glycerin and from salts, contains also some of the specific products from the germ the same as does tuberculin, and as much, if none has been lost in the process of purification.

Tuberculinum purificatum (von Ruck), unlike the two previous preparations, is made from the whole culture fluid with the tubercle bacilli grown therein included. The object being to extract more of the tubercle bacilli proteids, it is boiled at a temperature of 120 to 130 F. in vacuo for a long time, say for six weeks or two months. The tubercle bacilli are then filtered out and the filtrate is treated and standardized, the same as in the preparation of tuberculocidin and antiphthisin. This preparation then differs from the other two in that it contains more of the specific tubercle bacilli toxins. It is not so much of a departure from the crude extract as they are, and it undoubtedly contains considerable of the principle Koch found to be immunizing in his tuberculin (R). This purified tuberculin, besides being an improvement on the crude article, has this advantage over the next greater improvement made by von Ruck in his *watery extract,* namely, that it costs about one-tenth as much, and therefore should be suitable for use in practice among the poor. Koch's tuberculin (R) undoubtedly contained the choice toxin immunizing property. Six years ago a substitute in the form of a clear liquid extract was suggested by me to Dr. von Ruck as an equivalent, which should be thoroughly filtered and standardized. The object was to get rid of the unpurified emulsion quality in the tuberculin R. Dr. von Ruck has well accomplished this in his watery extract, and gives his technique of manufacture as follows: "No culture fluid at all is used—only the tubercle bacilli obtained from full virulent cultures. These are filtered out of the culture fluid, and while on the filter are washed with distilled water to thoroughly remove the same. Then all moisture is removed by drying in vacuo, when they are powdered as finely as possible in an agate mortar. After this they are treated with sulphuric ether for the extraction of fats, and this treatment is continued till fats are no longer obtained. Thereafter the tubercle bacilli are again dried and powdered as before, when they are placed in a large glass container and pure sterilized distilled water is added. This glass container is then placed in a continued water bath with a temperature between 120 and 130 F. for a period of two or three months and occasionally agitated, when the fluid is syphoned off and filtered through porcelain. This fluid is then examined for proteids (and, if necessary, is concentrated) and standardized to 1 per cent., which represents the 'No. 100' solution. The result is that this fluid contains only the pure tubercle proteids (soluble in water) and nothing else. The whole process, including the germ culture and the after-testing on guinea-pigs, takes about a year for its completion. Experimental work has shown that the final product is the undoubted toxin of the tubercle bacillus, and that it contains immunizing and curative properties."

Thus it is apparent that the study of the tuberculins during the ten or more years since Koch put out his first product has been fruitful in the evolution of a remedy which approaches perfection.

My own experience favors this conclusion, and as there has been no time that I have not been at work with some one or two of these preparations, I can conscientiously say that the last is preferable to all the others.

The accompanying table, completed Feb. 20, 1901, gives the general results in 213 undoubted tuberculous cases, being probably one-fourth those seen by me, and all of those I have treated with any form of tuberculin in the ten years named, excluding those not under that treatment longer than a month, also excluding those treated for diagnostic purposes only. It may, however, be said that the gravity of the disease in these cases was sufficient to seem to demand that some additional help for them should be found beyond the usual methods of treatment; I mean even beyond the combination treatment which I always deem essential, embracing climate, hygiene, physical exercise, outdoor life, attention to alimentation, appropriate inhaling methods, etc. The complications and conditions indicated gravity, which was shown by the stage of disease at commencement of treatment. Of the 213 cases reported in the table 50 were in the first, 45 in the second, and 118 in the third stage. Note, too, that the results are carried forward to as late a date as possible, so that the favorable outcome bears evidence of the staying qualities of the immunity produced, even admitting that it was partial or incomplete. To summarize: Of 57 patients treated with crude tuberculin, eight to ten years ago, 17 or 30 per cent. are now known to be living; of 94 patients, treated with the purified forms of tuberculin (tuberculocidin, antiphthisin and tuberculinum purificatum) from four to seven years ago, 30 or 32 per cent. are living in good condition; while of 45 watery extract cases, 28 or 62 per cent. are living in apparent immunity.

TABLE OF RESULTS OF SPECIFIC TREATMENT.

Roman numerals=Stage of disease. Av. yrs.=Years known to be alive after commencement of treatment.

Specific remedy used.	Now or recently known to have been in good health.	Now supposed to be living.	Whereabouts unknown; possibly dead.	Dead; cause in part known.	General Results.		
					Disease thoroughly arrested or seemingly cured	Much benefited, immunity increased, life prolonged.	Retrograded or died; possibly of intercurrent causes.
Tuberculin (Koch) 57 cases reported.	I. 7 II. 3 III. 7 Av. yr., 8½	I. 5 II. 4 III. 9 Av. yr., 2½	I. 0 II. 1 III. 7 Av. yr., 2	I. 0 II. 4 III. 10 Av. yr., 2½	18	23	16
Tuberculocidin (Klebs) 21 cases reported.	I. 3 II. 2 III. 1 Av. yr., 7	I. 1 II. 2 III. 3 Av. yr., 2¾	I 0 II. 0 III. 5 Av. yr., 1⅔	I. 0 II. 0 III. 4 Av. yr., 1	6	10	5
Antiphthisin (Klebs) 47 cases reported	I. 6 II. 4 III. 6 Av. yr., 5	I. 3 II. 3 III. 11 Av. yr., 1¾	I. 0 II 1 III. 7 Av. yr., 1½	I. 0 II. 1 III. 5 Av. yr., 2½	17	19	11
Asses' serum (H K.Mumford)3cases reported.	I. 0 II. 0 III. 1 Av. yr., 3	I. 0 II 0 III. 1 Av. yr., 1	I. 0 II. 0 III. 0	I. 0 II. 0 III. 1 Av. yr., 2	0	2	1
Antiphthisic serum, T. R. (Fisch) 11 cases reported.	I. 1 II. 2 III. 1 Av. yr., 3½	I. 0 II. 1 III. 1 Av. yr., 2	I. 0 II. 2 III. 1 Av. yr.. 7⅓	I. 0 II. 1 III. 1 Av. yr., 1	3	5	3
Oxy-tuberculin (Hirschfelder) 3 cases reported.	I. 0 II. 0 III. 0	I. 0 II. 1 III. 0 Av. yr., 2	I. 0 II. 0 III. 1 Av. yr., 1	I. 0 II. 0 III. 1 Av. yr., ½	0	1	2
Tuberculin, purif. (von Ruck) 26 cases reported.	I. 5 II 1 III. 2 Av. yr., 3¾	I. 3 II. 2 III. 4 Av. yr., 1½	I. 0 II. 0 III. 1 Av. yr., 1	I. 0 II. 0 III. 8 Av. yr., 1	9	9	8
Watery extract (von Ruck) 45 cases reported.	I. 13 II. 6 III. 9 Av. yr., 1⅘	I. 2 II. 2 III. 5 Av. yr., 1¼	I. 0 II. 1 III. 2* Av. yr., 1	I. 1 II. 0 III. 4* Av. yr., ¾	18	22	5†

Reduced to percentages, and lumping similar methods for comparison, we have the following table: The first

* None of these were completed cases: 3 died of pneumonia; 1 of grippe, 1 from results of dissipation, and all some months after treatment.

† Previous column should rightly have benefit of 3 of these.

column of figures denotes "Disease arrested or apparent cures;" the second, "Much improved—immunity relatively increased;" the third, "Retrograded or died from various causes."

TABLE OF COMPARISONS BY PERCENTAGES.

Tuberculin	32	40	28	Approximately 7 yrs. since treatment.
Tuberculocidin, antiphthisin, tuberculinum purificatum.	33	40	27	Approximately 4 yrs. since treatment.
Asses' serum, antiphthisic serum.	30	40	30	Approximately 3 yrs. since treatment.
Watery extract	40	49	11	Approximately 1 yr. since treatment

For comparison, I also introduce herein Dr. von Ruck's lately tabulated "Comparative table of results."[7]

	Cases reported.	Percent. Recov.	Improv.
Treated without specific remedies	816	12.1	31.0
Treated with Koch's tuberculin	379	35.5	37.5
Treated with antiphthisin and tuberculocidin	182	32.5	56.8
Treated with purified tuberculin (von Ruck)	166	43.4	39.2
Treated with watery extract of tubercle bacilli (von Ruck)	303	56.1	33.7

I leave these tabulations to speak for themselves, for I wish to devote any remaining time allotted me for the discussion of the *modus operandi* of this immunizing process.

Ferdinand Hueppe[8] says: "By undergoing a disease the predisposition to that disease is removed and converted into its opposite immunity. In no case can anything appear in the form of disease which was not previously present in the body as a predisposition; external forces are able merely to make this predisposition apparent."

Applying this fundamental statement to tuberculosis we may be able to successfully answer the prevalent objection to this immunizing use of tuberculin. We can thus show that it is pre-eminently a natural process, and safe when intelligently used.

The objection referred to is based upon fear which, in turn, is grounded upon a false conception of the nature of this dyscrasic disease. The fear is that by the hypodermic injections we are introducing a toxin into a system already burdened by an excess of the same poison. This is a misconception of the facts. The truth is the toxin which is in the system is not appreciated by it in the way of being absorbed into the circulation. The whole nature of the process is to oppose such a result. Absorption is impossible because the toxin is stowed away in the germs in non-vascular tissue. Tuberculosis is not the destructive disease we picture it, at least not until it has reached and passed the breaking-down stage. Till then it is a building up, defensive process, i. e., during the pre-tubercular and infiltration stages. When this dyscrasia, which is an acquired fault of our civilization (more fully considered in my paper on "Devitalized-Air Toxemia, a Prime Cause of Tuberculosis") becomes a germ disease, whether by a possible auto-genesis or by transplantation from without the affected body, then the toxins are formed and centered in the bodies of the germs. If, in the beginning of their formation, these toxins could be appreciated by the system the disease would be auto-curative, if I may coin the term, and the tolerance or purification of the system, which we know occurs slowly under the present régime, would happen quickly; or if rapidly an unsurmountable amount of toxin were generated the end would also come quickly, as it does in diphtheria. But it is not that way in tuberculosis; the leucocytes and phagocytes begin their defensive warfare and stop absorption in the beginning of the trouble. They build their walls of non-vascular tissue around the germs—which encapsulation constitutes what we know as "tubercles"—and absorption thereafter is almost impossible. Not only this much hinderance to absorption is the rule, but the bacilli themselves are enshrouded in a coating of fat which still further prevents their disintegration even should they be set loose in the blood current. It is only by intricate chemical procedure that these enveloping fats, or fats and cellulose, can be dissolved away from the germs.

Not only is there this much of natural defense against the appreciation of the toxins by absorption in the commencement of tuberculosis, but all the way through the same relief from absorption is characteristic of Nature's provision. When it comes to the breaking up, and when necrotic processes and ulceration show that the non-vascular tissue has reached its limit and its death has commenced, then the vomicæ in the lungs and profuse expectoration of bacilli and mixed infection can still be looked upon as a part of Nature's effort at self-defense. Degeneration and breaking down occur, but there is not enough absorption of the toxin to stimulate Nature's antitoxic power, and finally there is not enough antitoxic power *remaining* in the exhausted system, not enough leucocytes and phagocytes left, to *be* stimulated.

What is needed is to aid Nature's defense when the cells are there to fight and when there is not too much for those that are there to do. There are many ways of stimulating this defense, viz., climate, exercise and good feeding each can do wonders, all of which tend to nullify the injury of rebreathed or devitalized air. But for specific stimulation, when Nature has no proper direction given her defensive cells, choose the toxin from the nucleus of the germ isolated from extraneous fats and not heated so much in the making as to lessen or destroy its immunizing power. Petrusky is satisfied with Koch's new tuberculin R, but he appears not to have known of von Ruck's Watery Extract, a more refined and better standardized product. Choose only such cases for the treatment as will favorably stand the specific stimulation. Be constantly hedging, by under rather than by full dosage, against overaction. The direction laid down by Petrusky is not bad. He says: "We should aim to produce a strong local, but weak general reaction." But do not expect any immediate healing effect upon necrotic tubercular tissue, concealed tubercular abscesses, ulcerating cavities, or any other manifestation of tuberculosis where the circulation of the blood does not reach. Such conditions are obstacles to any treatment whatever and will be favorably influenced very slowly if at all. This may mean a large concession to our average inability to accurately state what is taking place in concealed areas. Especially does extra caution need to be taken when tuberculosis is complicated with active pleurisy, with la grippe or other toxemia, as measles, etc. Better wait for the subsidence of any such conditions before proceeding with the specific treatment.

Dividing, as does Hueppe, the kinds of immunity into: 1, natural; 2, artificial, and 3, toleration, it is the third we are seeking to strengthen by our specific medication. By the other two, parasites are prevented from entering the body, but by this third kind the body has-

7. From "Clinical Report," Winyah Sanitarium, Asheville, N. C.
8. Op. cit., p. 249.

acquired the power of "paralyzing" the toxins of the germs. One of the best proofs possible that very little of the toxins are absorbed during the course of tuberculosis, is that this toleration immunity acts as it does. There is no time in this disease, from the earliest period of tubercle formation till years of the process have passed, when patients are not most sensitive to tubercle bacilli toxins. Yet experience shows that that sensitiveness can be gradually overcome and tremendous doses of toxins finally given without any reaction whatever. This would not be so if the germs were giving up these same peculiar toxins through absorption. The acquirement of this protective immunity takes time, for it must come about through slow and laborious intervention of the body cells. As Hueppe says: "The body cells, because of their relatively great independence of varying conditions of nutrition, are able to cling to their inherited or acquired characteristics." The resistance to their action is, of course, relative to the extent and results of the existing toxemia. In incipient cases of tuberculosis tolerative immunity to the extent of a cure may be obtained by this specific method in two or three months, while in others past the beginning of the ulcerating stage, the fight may have to be prolonged at times for two or three years with all the possible outside helps we can muster to our aid. Hueppe's reasoning seems to show that it is the active (protective) immunity as by the direct method which we need rather than the transient passive kind, as by the indirect method. "It is the organism of the host—the cellular tissues of the human being—that reacts toward the stimulus of those bacteria or bacterial proteids or toxins with which we endeavor to heighten the resistance toward parasites and parasitic poisons." The cells eliminate this strange proteid as soon as possible.

It is for this reason that passive immunity is not lasting. The chronic nature of tuberculosis, with its incapsulation of toxic products, and its protective walls of hypertrophied and infiltrated tissues, indicates the lesser application of the transient passive (indirect serums) as compared with the staying active (direct) method of immunization. Hueppe says: "In general, however, the defensive reaction which is provoked by isopathic or specific stimuli is the stronger and more persistent, and hence often appears peculiar in kind." It *is* peculiar in kind and is found (as Koch, Buchner, Vaughan, von Ruck and others have surmised or shown) in the proteids from the bodies of the germs themselves. "Gamelia, Hueppe, and afterwards H. Buchner, were led to the discovery that the 'specific' poisonous substances found outside the parasites in the culture fluids were not identical with the protective substance occurring in the disease germs or their metabolic products."[9] Petrusky, then, was wrong in his statement "that nothing will be gained by the search for new forms of tuberculin." So have men high in authority said that there was no use looking for any specific whatever in tuberculosis, for they said there were none to be found. Yet I, for one, like to think that there is more in store for us to be discovered in reference to tuberculosis than all we now know.

9. Hueppe: Op. cit., p. 308.

Dermatomyiasis.—L. Freund reports the case of a child with impetiginous eczema, extremely malodorous. The putrid odor was finally traced to two patches on the skull, and on removing the scabs, a nest of maggots was found beneath, 32 in all. They had eaten the periosteum down to the bone.—*Wien. Med. Woch.*, December 21.

THE IMPORTANCE OF HEREDITY AS A CAUSE OF INSANITY.*

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Freed from the trammeling influence of all metaphysical association and disencumbered of such ideas or expressions as "soul," "sublime intelligence," "spirit," "cosmic consciousness," etc., the study of that particular form of energy to which we refer as mind or mental action grows considerably less perplexing, and permits of speculation and observation from the same point of view as does the investigation of other functions of the same class of cell structure and as we proceed in our contemplation of mind as simply a function of matter, we are struck by the resemblance of the manner and degree in which its variations depend upon variations in form and arrangement of its particular protoplasm, to the manner in which other functions are modified by similar changes in the structures upon which they are dependent.

Now, of all variations in cell structure how clear it should be to us that this one of a retrograde character depending upon faulty development of, or degenerative potentiality in, the parent cell, and which we call an hereditary defect is no exception to the rule. It is a fact that has long been disguised, however, by misleading statistical information and hidden in a maze of metaphysical and quasi-scientific theories.

If it be established then, as our major premise, that this defective function we call insanity is a variation from the normal due to heredity, then it is obvious that the anatomic defect in the corresponding structure, upon which the defective function depends, must also be due to heredity. If this is so, then insanity is not primarily a disease, as we are commonly taught, but is an inherited defect and therefore in the individual incurable, although its manifestations may be controlled and modified. This much being granted, there are many other conclusions which follow logically and which will be presented later.

We must, first of all, come to an agreement as to just what we mean by heredity. A few brief references to the opinions of some of the leading authorities will serve to show the necessity for an understanding of some sort.

The view most widely held by medical men in general, and also by authorities on this subject, among whom I might mention Régis,[1] Charles Mercier[2] and Darwin,[3] is that the long-established law, "like begets like," holds good for morbid states as well as normal ones. Some observers refute the statement entirely, claiming that nature seeks to avoid a transmission of morbid states and will, wherever possible, return to the normal or physiologic plane. They hold that heredity is nothing more than disease tendency. There are shades of difference in the various views included in this class; for instance, some go so far as to say that certain organs, the nervous system among them, are susceptible to the same disease that affected the same organs in progenitors. Others again maintain that disease tendency in the offspring simply means a generally defective organism that may express itself in a susceptibility to disease of any kind and in any organ.

A third view still to be considered is one, which with the first, rejects the idea of tendency to a transmission

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Nervous and Mental Diseases, and approved for publication by the Executive Committee: Drs. Frederick Peterson, Hugh T. Patrick and H. A. Tomlinson.

of morbid states, and yet does not admit with the second, that although morbid states are not usually transmitted, disease tendency may be, but holds that by heredity as applied to insanity we mean that the reproductive element of either the male or female carries with it merely an impaired potentiality. Its protoplasm is deficient in reproductive strength, and being thus defective will produce a defective organism. Kraepelin is the only prominent exponent of this theory.

In recent works upon insanity the subject of heredity is lightly touched upon, and in some, particularly the latest edition of Clouston[4] and also the second edition of Bevan Lewis,[5] no statement of the nature of heredity is presented. Weismann's work on the germ plasm, published in 1893, deals more particularly with transmission of acquired characteristics of a normal type, and does not aid us materially in the solution of this question. T. H. Kellogg,[6] formerly superintendent of the Willard State Hospital, gives a very good summing up of heredity. The relation of heredity to insanity is given and its modifications extensively discussed, but the author does not take any definite stand, presenting the conclusions that have been drawn from statistics of the past, and contenting himself with the statement that "it is the tendency and not the disease which is inherited, and that it is instability of the nervous system and susceptibility to mental disorders which descend from insane parents to the offspring."

Régis presents a very clear statement of his position on this question, from which I have abstracted the following: "Heredity is without contradiction the most powerful and important of all the causes of insanity. It is an original predisposition to mental alienation transmitted to children from their parents." He calls attention further to the fact that this predisposition may be not merely mental alienation in the ancestors, but there are related diseases such as eccentricity, neurosis, alcoholism, certain diathesis, consanguinity, etc. He admits along with Marcé that we may find some antecedents in nine-tenths of all cases.

The excellent article by Charles Mercier in Tuke's "Dictionary of Psychological Medicine" contains the following sentence: "The law of the direct transmission of qualities is simply that the offspring tends to inherit every attribute of both parents; inheritance is the rule, non-inheritance the anomaly." The inference from this statement and other expressions in the article is that morbid tendencies, at least, if not morbid states as well as healthy ones can be transmitted. He also devotes considerable discussion to the question of the law of consanguinity, which he calls the second law of heredity and which he states as follows: "The quality of the organization of the offspring depends on the suitability of the parents to each other," and proceeding from this premise, he advances various conclusions showing that insanity and allied defects are due, in many cases, to non-observance of this law. I think that we may take his article in its entirety as representing quite fairly the attitude on this subject of the British school of alienists.

An article refreshing in its clearness and brevity is that by Dr. Peterson[7] of New York appearing in the text-book published by Drs. Church and Peterson last year. He calls attention, as do very few authorities, to the necessity for investigating the presence in the family not only of insanity, but of the hereditary equivalents, and states that "it is an unstable nervous organism that is inherited in both neurosis and psychosis." He calls attention also to the faulty manner in which the statistics of heredity are gathered, and presents for example the statement prepared by the Lunacy Commissioners of England and Wales, showing that in 136,478 admissions to the asylums their hereditary influence ascertained was but 20.5 per cent. He is inclined to agree with Mercier on the principles of heredity, and also, I take it, upon the nature of hereditary transmission, particularly in regard to the law of consanguinity.

Of journal literature bearing upon this subject I find very little of value in the form of clear statements on the nature of insane heredity or of its degree of prevalence.

In the files of the *Journal of Mental Science* I find reference to the paper of J. F. Bristoe,[8] read at the annual meeting of the Medico-Psychological Association held in London in 1896, in which he gives as his opinion that 90 per cent. of the insane have insane heredity. This statement is striking from the simple fact that thus far he has stood almost alone in his assumption. No mention is made of any observations, however, that would substantiate his position. There are also one or two fairly good reviews of Weismann's doctrine, but nothing that is of much benefit to us. Volume No. 41 contains a review of an article by Charles Féré[9] of Paris, published in 1894, in which attention is called to the fact "that in heredity that which is really transmitted are errors of nutrition, producing different defects during the embryological period, according to the stage in which they occur. Errors of development cause a morbid predisposition. Thus, hereditary troubles or circumstances of evolution bring progressive destruction of the characteristics of the race, that is, they induce degeneration." He makes two divisions of hereditary tendency in nervous diseases, one which he calls insane heredity and one neurotic heredity.

One of the best of the earlier contributions to the study of heredity in insanity is that of the late Dr. Gray[10] of Utica. He takes exception to such views as those of Mercier and Régis, and quite successfully attacks the theory that morbid states as well as normal attributes are transmitted. I select a paragraph which states his position very clearly. He says: "What I wish to combat is the notion of the direct transmissibility of disease as such; the monstrous figment of scientific pessimism that the abnormalities and lesions of the human organism can acquire in such persistent and stable character as its own *vivida vis* itself, that nature puts a destructive force on an even race with the constructive in any of her operations—an idea which ought to be contrary to any philosophic system of evolution itself. If all that is claimed for morbid heredity be true it would be a cumulative process which must eventually swamp the vital energies of the world. It seems philosophically absurd to assume that a force so opposed to organic life can so seat itself in the constitution of an organism as to perpetuate itself by that organism's generating power. Nature rejects or eliminates the taint of death. No sooner do the decaying elements enter the earth than they are transformed into life-giving agents and that which is 'corruptible puts on incorruption.' The earth itself is not more surely the purifier of all corruption than is the stream of human vitality which shows its recuperative tendency, casting out and eliminating the elements that are hostile to its own existence and welfare."

Much more might be added to illustrate the diversity of views upon this question, but it is not necessary

and probably this much is uncalled for, as you all must be aware of these differences in opinion and feel, as I do, the need of a clear statement to which the most of us can subscribe. I shall return to this later and take up here, the other point of difference—degree of prevalence.

On this subject also we find a wide variety of expression. The proportion of insanity considered to be due to hereditary causes varies from 13 per cent., as reported by some of the English asylums, up to about 70 per cent., as held by some of our latest German authorities, particularly Kraepelin.[11] The average given by the annual reports of various institutions of this country varies between 25 and 40 per cent. I need not take the time here to discuss the reasons for this, they are so apparent. Simply, first of all, the failure to agree on the question, "What is heredity?" and second, differences in methods of history-taking.

In the first year or two of my connection with asylum practice, two things in particular made a very profound impression on me. The first was the fact that nearly every insane person presented stigmata of degeneration, or at least, deviations from the normal both as to face and figure, and also that in many of their relatives who came to visit them these peculiarities could be noticed. The other was the disinclination of patient's relatives to admit freely the existence of insanity, inebriety, eccentricity, nervousness, consumption or allied conditions in the family, and also that in many of the cases already on record in the asylum having "no heredity" written under the head of "family history" subsequent inquiry made of disinterested persons elicited information showing the presence of perhaps several cases in that particular instance. These observations naturally led to extensive reference to available authorities, and the astonishing differences of opinion alluded to above were found. It seemed to me at once, and is now quite plain, that these figures are grossly misleading, and pernicious in their ultimate effect.

After several years of observation in which a careful record of hundreds of cases has been made, I have come to the conclusion that there is a family history of defective nervous health in perhaps 95 per cent. or more of all cases admitted, at least from such a district as that in which I have gathered my facts, and I shall present here for your consideration the results shown by the analysis of the family history in 200 individuals, 100 of them being consecutive cases in which the writer has conducted the history-taking, and the other as a control observation, the analysis of the family health of 100 sane individuals of supposed normal organization.

In the 100 consecutive cases of the insane there were 31 showing direct insane heredity, 35 showing collateral insane heredity, a total of 66 per cent. Of the remainder, 14 showed direct or collateral neurotic heredity, this including epilepsy, inebriety, the so-called nervous types, etc., and 8 gave a history of direct or collateral consumption, the total being 89 out of 100. Then, there are many instances where there are combinations of these conditions, for example, there were 11 cases in which neurotic and insane heredity were combined, 12 in which consumptive heredity and insanity were combined, 7 in which consumptive and neurotic heredity were combined, and 4 in which there was insane, consumptive and neurotic heredity, so that in the 100 cases presented for analysis there was insane heredity in 66, neurotic in 38, and consumption in 31. In 3 cases out of the 100 there was a history of parents being first cousins.

Of the 11 cases not included in the analysis, there being in the family history none of the conditions tabulated, one came of a family in which 6 died before the age of 12 months was reached and two more were stillborn—the father, it is said, died of apoplexy. Two more presented very decided stigmata, both physical and mental, and the father of one died under 40, apoplexy being given as cause of death. Three more presented family history in which cancer or apoplexy had existed. There remain then just 5 cases out of the 100 with family history perfectly clear of all these conditions, and of these 5 none have prominent stigmata, 4 are well and one is still under treatment. In the tabulation of all these cases note was made of the patient's age, sex, social state, form of psychosis, and result of treatment, but as these items do not affect my conclusions I need not refer to them here.

Turning now to the analysis of the 100 presumably normal individuals we find no direct insane heredity, but 3 cases of collateral insane heredity, 14 of direct and collateral neurotic heredity and 22 of direct or collateral consumptive heredity. Consumptive heredity was combined with neurotic heredity in 7 cases, so that the total number with consumptive heredity was 30. The parents were not related in any case. This observation of the family history of the normal individual was made upon asylum nurses and attendants to the number of 150, 100 consecutive cases being taken for analysis.

On finding, in our investigation of insane heredity, the great discrepancy between our results and that of other observers, it was thought that possibly if inquiry regarding the family health of the normal individual were made to the searching extent that was made in the ones of the insane individual it might be found that even in the family of the sane, conditions resulting in insanity or degeneracy might be found to a surprising extent. The asylum attendant was regarded as a proper subject on which to make this observation, as he has been reared under the same geographical conditions and social influences as are the patients. The possible difficulty of getting accurate and unreserved returns was at once realized, and in order to meet this we sent printed forms to each attendant arranged in such a way that he could indicate the health of each individual in his family, both ancestral and collateral members, simply by making check-marks opposite points indicated. The instructions read that names need not be signed, nor any indication of the reporter's identity be given. We have every reason to believe that the reports made are truthful and that as far as possible they are complete, certainly as complete as the histories of the insane individuals presented in this analysis. It is fair to assume, perhaps, that the asylum nurse or attendant is superior in nervous organization to the average man or woman of our district, as a high standard of health in our probationers is insisted upon. I do not know though that this should weaken the force of deductions made from the comparison of their family health with that of the insane, for they represent the very class in which insanity does not develop. It is so extremely seldom that a relation of an attendant or an ex-attendant is admitted as a patient that it is a matter for especial comment.

Let us return now to the question of the nature of hereditary influence. This is something that does not as yet admit of conclusive ocular demonstration, but can be narrowed to a small compass by inductive and deductive processes. I shall content myself for the present by offering for discussion what is scarcely more than a tentative statement of the view I hold and which in

some respects is an expansion of the idea embraced in the last of the three theories alluded to above.

1. All defectives must necessarily have derived a defective something from their ancestry.

2. This is probably a protoplasmic defect in one or both of the reproductive elements and is not necessarily a disease or even a disease tendency, but may consist merely in a lack of inherent power to grow to a normal or full development. Both disease and disease tendency may be transmitted in utero from the mother, but such is not hereditary.

3. The defect in the reproductive cell depends upon deficient or deranged innervation in the parental organism, which in its turn is due to hereditary defect or acquired derangement of various sorts, but all acting on the cell through the nervous system of the parent.

This conception of heredity would, of course, extend the list of conditions that may result in insanity, or other defective states of the nervous system. In its greatest breadth it means that any condition operating upon the development of the parental cell, and which has the effect of impairing, even in the normal individual, its nutrition and so its potentiality, will result in a defective ovum or spermatozoön and so in defective progeny. It would include all such conditions as overwork, dyspepsia and other serious defects in assimilation, wasting disease, neurasthenia, abuse of the sexual function, and in fact, a list so long that we can not discuss it all here. It rejects the idea that morbid states are transmitted through the cell itself, questions the possibility of morbid tendencies being so transmitted, and maintains in short that the various manifestations resulting from what we call heredity are due simply to a *weakened* reproductive element. This view is based principally on the following thoughts:

1. The overwhelming evidence that Nature everywhere seeks to eliminate the abnormal, and that as stated by Dr. Gray, the assumption that morbid states could be transmitted per ovum would be at variance with the fundamental principle of evolution itself. On the other hand, the theory that the defect in the fertilized cell is simply a lack of developmental force is quite compatible with established biological facts and is antagonistic to none.

2. If we assumed that by hereditary defect was meant that certain organs of the descendant were impaired by reason of corresponding defects in the same organs of ascendants, we should have to prove that certain portions of the blastodermic protoplasm developed into certain organs, or, in other words, that differentiation anticipated segmentation. Now we know that this is not true, because differentiation is largely a matter of position of the cell, for experiments with ova of both vertebrate and invertebrate show, for instance, that the nervous system can be made to develop from either the upper or the lower surface of the egg, depending on which side is up; then how could any particular section of its protoplasm serve as the object of hereditary disease selection? Embryology furnishes further proof along this line that can be adduced if necessary.

3. A careful analytical study of stigmata of degeneration shows that in the various deviations from the normal there is very seldom any marked resemblance to corresponding features in the parent, but on the contrary a marked deviation from the ancestral type is seen. We do find, however, on every hand evidence to support the theory I have offered, for what are stigmata of degeneration but deficiencies and inequalities in development combined with occasional reversions to lower type, all of which are the logical results of impaired potency of the germal cell.

4. If the defect is one of impaired force, then the result of this impairment will be seen at the point most remote embryologically from the generating force. This point is the neuron; here we find the highest type of cell development. There is no further cell division, no further differentiation.[1]

Before proceeding to my conclusions, let me say that they, of course, depend not on the analysis of the 200 cases presented, but upon many times that number, the time at my disposal not permitting more extensive tabulation. I must admit that facts I have gathered from the study of degeneracy have also influenced me not a little.

If you grant me that heredity, as I have defined it, is the fundamental cause of 90 or 95 per cent. of insanity, then:

1. Insanity is not a disease, but a congenital defect, the manifestations of which appear from time to time as irritation is applied. There are some very apparent exceptions to this, consisting of a small percentage of cases in which physical or mental stress is so great as to be in itself sufficient.

2. If insanity is such a condition, then it is, in the individual, practically incurable and must be met, if met at all, before it has existence. In other words, we must not wait for the appearance of the individual before we set in operation our therapeutic measures. Let me explain here that I do not call a remission of a year or so, or indeed several years, a cure. It might be remarked that on this theory there are derangements of many organs of which the same might be said regarding recovery, so that it is simply a juggling of terms. It must be remembered, though, that a disorder affecting, for instance, the cortex of the kidney may be compensated for by other tissue and its results are scarcely seen for years, while a disorder of much less extent in the cortex of the brain will in a short time wreck a life completely.

3. If this deduction as to curability in the individual be true then the question of the treatment of the acute stages of insanity sinks into insignificance beside the great problem of controlling heredity.

The State of New York is much engaged at present with the question of psychopathic wards. We have just had an appropriation in Michigan for such a ward at the University Hospital. These are much needed additions to the teaching armamentarium and will be welcomed as such by all, but the trend of editorial expression regarding this is in emphasis of another phase of the question, viz., the possibility of some world-startling discovery as to the cause and hence the cure of insanity. Now, this is, to put it mildly, ill-advised. As a student, I was taught just such nonsense, and I entered the field of psychiatry filled with vague ideas of "reflex eye strain," "reflex pelvic irritation," possible microbic origin in the cerebrospinal fluid, and a host of other things equally unimportant—but of heredity very little. Those of us who are living with the insane recognize these and other exciting causes of insanity—recognize them at their true value and treat them. The care of the acute case is comparatively a simple problem. At the Michigan Asylum at Kalamazoo we are enthusiastic in our efforts for the restoration of the restorable, and it happens to be my privilege to care for this class. I can not lose sight of the fact, however, that many of the cases we proudly dismiss as cured return to us, in a few years at the outside, after having bestowed upon the community several more to take, in a decade or two

hence, the places in the asylum once occupied by their progenitors.

4. If my major premise be correct it defines the limits in certain directions of the function of the pathological laboratory as an adjunct to the study of the etiology of insanity. For several years pathologists, neurologists and others have been telling us that every asylum should have a laboratory for the purpose of working out the cause or causes of insanity, and many asylums have, in consequence, established laboratories where both time and money is spent in a frantic effort to be doing "pathological work," and which in many instances has no bearing upon the great problem. Now, it does not seem to me that the microscope can reveal to us the cause of insanity if we already know it. The pathological anatomist can in time give us as good a description of a neuron congenitally defective, as he does now of a diseased one, and that, of course, will be interesting. There is, in fact, considerable work being done in this line at present. But the usefulness of the asylum laboratory, I am inclined to think, will be found to lie in the direction of investigation of deranged metabolism and of errors in the process of elimination, this including the nature and extent of its effects upon nerve tissue, rather than in the consideration of deterioration changes dependent upon dementia.

5. Finally, if the facts so far presented have not inflated values, our work upon this question is very plainly cut out for us. It is already evident that of the two questions—prevention of insanity and the care of the insane—the writer attaches chief importance to the former. The consideration of prophylaxis, although not coming within the scope of my paper as indicated by the title, still must follow naturally and the matter seems so urgent in its demands upon our attention that I can not refrain from outlining one or two suggestions.

The increase of insanity can be regulated both by legislation and education, and the feebleness of effort being made at present along either line does not do justice to the severity of the case. The question of legislative control is a problem far too knotty for me, and I shall dismiss it briefly.

No doubt there is a large class of defectives that is fit only for legislative control; it can not be reached by reason, but I think it is safe to assume in general that when legislative efforts of the prohibitionists have made such little headway against the craving for alcohol, all similar efforts directed against the control of a much stronger passion will be found correspondingly more futile. The question of legalized mutilation comes in properly here, and I mention it simply for the purpose of inviting discussion, having upon the subject no clearly defined idea myself.

When we come, however, to the question of education, there is much to say and more to do. Little is being accomplished, not very much attempted, with this remedy, and it is the one of all that will in the end be found efficient. There are several lines of action that might be suggested.

1. The asylum or hospital for the insane should be for its district the source of constant effort towards the promulgation of truth regarding the influence upon progeny of heredity and of errors in living. This effort should be in the form of popular articles in the papers of the district, not at infrequent intervals, but appearing regularly, and in such form as to command attention and thought. The medical officers of the asylum should be as actively employed as possible in what I might call medical missionary work throughout the district. Not a month should go by without a popular lecture delivered in some portion of the district by an asylum man.

2. A more important place should be accorded the study of insanity in our medical colleges. The teacher should be, in every case, a man who has had previous asylum experience of, at least, four or five years, and should have at his disposal for clinical instruction a department for the insane such as is now proposed in many localities, under the name of psychopathic wards.

3. The general practitioner could be reached frequently and effectively by papers presented in the meetings of local medical societies. It is very seldom, indeed, that we ever notice any paper upon this subject at such gatherings, and those that are presented deal with treatment rather than with etiology.

The subject of prophylaxis is, of course, too broad a one to be adequately presented at this time, and in conclusion I have only to say, that not until we recognize more generally the fact that insanity is but one of many symptoms, that the disorder itself is defective organization and that prophylactic control is the only control, will any *real* progress in psychiatry be made.

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DISCUSSION.

DR. EDWARD E. MAYER, Pittsburg—I wish to enter a decided protest against some of the essayist's views. It seems to me that if we viewed the subject from his standpoint, we would relegate the treatment of insanity and the treatment of the insane to where it stood fifty years ago. I am entirely opposed to such nihilism and pessimism, especially in this aspect of medicine. I believe, of course, that heredity is the most potent cause of insanity, but as far as I know it is not the only factor. It seems to me that environmental causes deserve a little consideration. Hereditary causes are often sought for too persistently; physicians attempt to trace cause to effect through generations widely separated and ignore the other factors which are in play. If we agree with Dr. McGugan's views, then the superintendents of our insane asylums should simply be regarded as boardinghouse-keepers, and we must say to 95 per cent. of the insane: "You were unfortunate in your birth and we can do nothing for you." I believe that at least some of the acquired psychoses are curable and do not harm the descendants. Furthermore, I think the statement that heredity is the cause of insanity in 95 per cent. of cases is not in accordance with the consensus of opinion on this subject; that proportion is too high. Authors vary in their statistics between 4 and 90 per cent. in giving heredity as the cause of insanity. Statistics of course are deceiving and the results depend upon the views of the statistician. It seems to me also that to neglect such factors as environment, civilization, syphilis, alcoholism, and toxic conditions requires some explanation.

DR. RICHARD DEWEY, Wauwatosa, Wis.—Recently, in this state, an attempt was made by the legislature to prevent the marriage of any one who was afflicted with insanity, epilepsy and certain other diseases. Such laws at least call the attention of the people to the importance of these matters, even if but little is accomplished by them in a practical way, and that it is to be feared is their chief utility. People palpably affected are not likely to try marriage, and others can not be prevented.

DR. T. D. CROTHERS, Hartford—From my experience with persons who are addicted to the use of alcohol and drugs, I

have become firmly convinced that heredity is not only a potent factor in these conditions, but also in insanity. I believe that in a large proportion of these cases there is a strong predilection toward insanity, or alcoholism and the abuse of drugs which is acquired from their forefathers. I believe this is present in from 60 to 70 per cent. In the cases of alcoholism which I have collected, the habit is distinctly traceable to one or both parents in this proportion.

DR. C. A. DREW, Massachusetts—If I understand the essayist correctly, he advocates educational methods for the correction of the hereditary elements of insanity, and general hospital methods—the rational treatment of all abnormal states of the blood and derangement of the different organs—for the correction of contributing factors. In this I heartily agree with him. I do not agree with one of the speakers that the paper contained any statement advocating a return to old methods—or hopeless methods. It is well to look the facts squarely in the face, and the facts concerning heredity which Dr. McGugan has collected and presented in his paper harmonize, I believe, with the observation and experience of those who have most carefully studied the causative relation of degenerating neurons and insanity.

DR. H. S. DRAYTON, New York City—To a certain extent I agree entirely with the reader of the paper, but I am not with him in all his conclusions. I think the discussion of this subject will prove somewhat analogous to that on criminality as carried on in the conventions held in Europe during the past eight or ten years. Some years ago the school of Benedict and Lombroso was in the ascendant regarding the status of the criminal, the proposition that a man was a criminal by reason of his brain organism being enunciated by that school. In the more recent discussions, however, I have noticed a decided change in the attitude of anthropologists, and the point has been accentuated by Manouvrier and others that after all it was not so much the heredity of the individual as the environment in which he was brought up from childhood that had to do with the criminal evolution in conduct and life. I am willing to accept heredity as a prime factor in many conditions of our mortal career, but I think that environment should be regarded as an equally potent factor, and even more potent in determining action on any given occasion. I believe in giving the individual, however low born, a chance for improving so that the beneficial effects of education and a proper milieu may offset the drawbacks of his birth and childhood's surroundings, and so favor his evolution toward good. That this evolution is possible has been demonstrated by the results obtained in many institutions in Europe and in this country. The authorities of the Burnham Farm at Albany, which was established for the purpose of reclaiming reckless and vagabond boys, have been encouraged by the happy effect of the training given there. Many that were deemed incorrigible were found amenable to discipline and instructions that are judiciously administered.

DR. JOSEPH F. ROBINSON, Nevada, Mo.—We are often asked what is the cause of insanity, and as the result of eight years' study of this question I have come to regard heredity as a very important factor. "Like produces like," not only in the animal kingdom, but also among human beings. This is something we must all admit. In getting the history of an insane patient, I have frequently noticed a disposition on the part of friends or other members of the family to hide or distort the real facts regarding the occurrence of other cases of mental trouble in the family. This should be borne in mind in connection with the statistics on this point. I regard insanity as a mental manifestation of a physical disorder in persons who have an inherited predisposition toward mental diseases. In such individuals the soil is ready for the seed.

DR. F. SAVARY PEARCE, Philadelphia—Last year this Section was besought to uphold certain members of the profession in New York in their petition that the New York State Pathological Institute should not be discontinued. We upheld them in their request, and no one can underestimate the value of the work done in New York and in other laboratories throughout the country. While their services are most valuable in connection with asylum work, I think that physiologic chemistry is really paramount, and it is in that field that the greatest discoveries in connection with insanity will be found.

THE CHAIRMAN, DR. TOMLINSON—The most of the work in the pathology of insanity has been done by neurologists, and they have paid too much attention to the morbid histology of the brain and too little to the natural history of mental disturbance. In 1895, in Boston, I read a paper before the American Neurological Association on "The Transmutation, Coexistence and Concurrence of Insanity and Phthisis," and gave the statistics derived from a study of the patients in the hospital at St. Peter. The statistics went to show that our patients who died from phthisis were the children of insane or neurotic parents; while those among our patients who were the children of the tuberculous did not die from phthisis. In some families there was a concurrence of insanity and phthisis, and in some patients coexistence of both forms of degeneration. I think that the problem of heredity has been befogged in discussion by the widely different conceptions of what is meant by the term, and this confusion exists especially in the relation of heredity to insanity. If development teaches us anything, it is that heredity really means some condition existing in the parents which results in bringing into the world an individual of limited potentiality, and this unequal limitation may involve a particular structure or those which are similar in function. The frequent involvement of the nervous system, even where the weakness in the parents involved some other part of the organism, is probably due to the well-known law of degeneration, that those structures which are the most highly developed and complicated are the first to be involved. There must be something besides the syphilis, alcoholism, other disease or traumatism to produce insanity, and that something is the limited cerebral potentiality of the individual. It does not necessarily follow that he must be the child of insane parents. He may have been born of syphilitic, epileptic, gouty or tuberculous parents, who, on account of the impaired vitality which results from the presence of these diathetic conditions, have given birth to a child of limited cerebral potentiality. The children of the insane are, as a rule, unstable, while the children of those who are the victims of diathetic conditions are defective. These latter may become actively insane, but usually progressively degenerate. The former may never be insane, but tuberculous instead.

DR. ARTHUR MCGUGAN, Kalamazoo, Mich.—Replying to Dr. Mayer, I admit that I may seem pessimistic, but we must face facts as we find them. I firmly believe that heredity is the fundamental cause of insanity in 90 per cent. of our cases, or even more, and I wish to emphasize this point for the proportion reported is not "estimated," guessed at, or borrowed from the observation of others, but is based upon the results of my own long-continued and carefully recorded observations. It is not to be assumed with Dr. Mayer that, were my conclusions accepted we must retrograde, but rather that we shall look forward to new and broader fields, for progress must always rest upon truth, not sentiment. Neither is it to be assumed that insanity not being a condition presenting hope of permanent cure we should relax our efforts in the care of the individual. I wish to state in this connection that we have at the asylum with which I am connected and on my service, a special hospital building for recent cases where all the so-called "sanitarium methods" of treatment are provided for and used; indeed, we are most enthusiastic in our efforts for the restoration of these unfortunates, but upon the reappearance of normal mental action we do not felicitate ourselves that we have produced a cure; it is simply a remission. Realizing then so clearly that cures are few and far between, the same management of the patient is directed to be carried on at his home after discharge or parole is ordered with special reference to the prolonging of the remission. I quite agree with Dr. Drayton in regard to the importance of environmental influence upon the children of degenerates. The restoration of the family line to a normal plane would require probably as many generations as it took to reduce it to its present abnormal condition. This is a practical application of the study of heredity and is an expression of the frankest optimism.

INCIPIENT AMYOTROPHIC LATERAL SCLEROSIS, WITH RECOVERY.

BRACHIAL NEURITIS, ANGINA PECTORIS AND EPILEPSY FROM ELECTRICAL INJURY.—TRAUMATIC NEURITIS AND PERSISTENT BRACHIAL NEURALGIA FROM HYPODERMIC INJECTION.*

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MINNEAPOLIS.

The following cases have been selected because of unusual conditions obtaining in each which make them instructive and of sufficient value to warrant their presentation.

INCIPIENT AMYOTROPHIC LATERAL SCLEROSIS WITH RECOVERY.

The family history shows a pronounced neuropathic taint both important and interesting as an hereditary element in causation. On the mother's side a great grand aunt was confined in an asylum. The grandmother had much rheumatism with heart complications and was very "nervous." A great grand uncle was similarly afflicted, and the grandfather died of apoplexy. An uncle when young had some sort of attacks of unconsciousness, apparently epileptiform in type, and is now nervously unstable. An aunt is subject to frequent fainting attacks. One cousin has had chorea and two others are nervously excitable. His mother has suffered much from vertex headaches, and following his birth, for a long time, had distressing feelings that different parts of her body were very large. She has much trouble swallowing hard foods. The patient's oldest sister had hydrocephalus, was very precocious but peculiar, and died of diphtheric paralysis of the throat.

The subject of this report first came under observation in January, 1899, and was under control for eighteen months. He was the weaker of twins, developed slowly and did not walk till he was two and a half. He was bright, learned to talk quickly, but was peculiar and hard to manage. When first seen he was 16 years old, tall and slight, having grown very rapidly. About two months previously wasting had been noticed in the muscles of the left hand between the thumb and forefinger, and soon after this on the back of the hand.

When first seen there was pronounced loss of substance in the adductors of the left thumb with deep excavation, and also marked depressions between the first and second metacarpal bones. The thenar and hypothenar eminences were distinctly flattened, as was also the entire palm, and the thumb was approximated to the first finger. The hand was weak and tired easily. There was no history of injury, and no complaint of numbness, but there had been very slight pain in the palm of the hand. There was no tenderness along the nerve trunks of the arm and no sensory disturbances of any sort. The grip was weak, the hand slightly tremulous. All the tendon and periosteal reflexes of the left arm were much increased, those of the right arm were somewhat more active than usual, but there was no muscular involvement. The muscles of the left forearm showed some loss and measured one-half inch less than the right. The hand had a pale and trophic look. Fibrillation was not observed, and the reaction of degeneration was not present, although there was apparently quantitative diminution in electrical response over the affected muscles. Musculation was still normal in the right arm and both legs. The patellar reflex was somewhat increased, more on the left; there was no clonus.

The patient's head was strikingly peculiar in shape, very high above the ears, the forehead flat and the antero-posterior diameter short, the measurements being as follows: Vertical height, meatus to crown, 6 inches; antero-posterior diameter, 7¼ inches; transverse diameter, 5⅞ inches; circumference, 21½ inches. These peculiarities are probably of only relative value, indicative of general congenital defects.

As this was an absolutely typical syndrome of amyotrophic sclerosis, an entirely unfavorable prognosis was given, but treatment was begun at once with the galvanic current, long sittings, thirty to forty minutes, three times a week, with a current of moderate strength, 8 to 15 milliamperes. The nitrate of strychnia, 1/30 grain, three times a day, was given with short interruptions for over a year, and hot salt baths with massage three times a week. Free feeding was instituted and rest and exercise regulated, avoiding all fatigue.

For a time the condition progressed, then, after becoming apparently stationary, distinct improvement was manifest. The volume of the interossei returned first, the adductors of the thumb began to fill out, and the thenar and antithenar eminences and palm following gradually. Improvement continued to complete restoration of muscular volume and strength, which it reached in about fifteen months from the beginning of treatment. He has also become robust and developed a solid physique. All treatment was discontinued more than a year ago; the hand has remained entirely well, and recovery may fairly be considered complete.

All authorities agree on a uniformly unfavorable prognosis in amyotrophic lateral sclerosis. Strümpell, alone, quoting Seligmann, says that in very rare cases in young subjects the process may be arrested. Accurate knowledge of the pathology and clinical grouping of the degenerative processes of the nervous system is still too recent for dogmatic conclusions as to possible results, and up to the present we have little exact data on the causes which lead to their development. Such cases as the above help to point leading factors in the direction of heredity and faulty and lowered nutrition. This boy inherited a weak nervous system, which proved unequal to the strain of rapid physical development, and began to give way. The clear indication is for measures calculated to stimulate and improve nutrition generally, and especially of the nerve structures, cell and fiber that have begun to break down, at the same time removing all sources of fatigue. Recent results by various observers in this direction point toward a distinctly improved prognosis in degenerative processes of the nervous system and may well claim our closest investigation.

BRACHIAL NEURITIS, EPILEPSY AND ANGINA PECTORIS FROM INJURY BY ELECTRICITY.

A young man of fine physique and an athlete, a motorman on a street railway, was taking a disabled car to the repair shops. The rheostat would not work, and the current had to be controlled by the cut-out. His hand came in contact with exposed metal while the other hand was on the brake wheel, his body closing the circuit. He hung suspended from the handle of the cut-out, unconscious, while the car moved about a thousand feet, part of the distance being on an upgrade. The jar of the car running over a switch and the bending of the handle broke the circuit, allowing him to fall to the floor, when he came to consciousness. Getting to his feet he found

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Nervous and Mental Diseases, and approved for publication by the Executive Committee: Drs. Frederick Peterson, Hugh T. Patrick and H. A. Tomlinson.

the left arm powerless and without feeling, two large burns on the left thumb and several smaller ones on the right hand; his head ached severely. About eight hours after the accident intense pain began in the left arm and side, which was continuous for several weeks, almost entirely preventing sleep, with entire loss of muscular power in the arm, slight flexor power then showing in fingers and elbow. The pain in the side at times, on exertion, developed spasmodic attacks, shooting through the chest to the back, radiating down the arm, and excruciating in intensity. Seizures with loss of consciousness also developed on the second day following the accident, with brief tonic and clonic spasm, voiding of urine, biting of the cheek, and sequent stupor for an hour or two. He was losing flesh and dull mentally; had deficient memory, little sleep and poor appetite.

Physical examination showed a well-developed physique, dull and fixed facial expression, face flushing easily, left arm carried partially flexed and held stiffly, fingers partly flexed, hand cool, somewhat cyanosed and mottled in appearance. There was slight power or motion only in hand and arm, and all passive motion caused severe pain, accompanied by spasmodic contraction of the muscles. There was increased irritability of muscle bodies to reflex stimulation and tenderness along the nerve trunks of the arm.

Measurements showed the left forearm and upper arm ¾ inch smaller than the right, over the middle of the deltoid 1 inch smaller, crest of the deltoid 1¼ inches, and the left chest 1⅜ inches less than the right. There was also loss of sensation, both to touch and to temperature and pain throughout the left arm, the left side of the body to the median line including the side of the head and face, except the ear, and a small area about the wing of the nose and the upper lip. It extended down to the hip, and a paresthesia continued over the upper third of the thigh, on the outer side. The loss in muscular volume about the shoulder and arm was very apparent on observation. There was distinct fibrillation, more especially noticeable in the deltoid and triceps. The pupils were normal. The field of vision showed moderate limitation. There was no incoördination and no involvement of the lower extremities.

Slight improvement occurred in the power of motion in the left arm after three or four months. The anesthesia was a little less profound; the pain in the arm improved decidedly, but the attacks of spasmodic pain in the left chest and the seizures have persisted. He has slept poorly, with harassing dreams; the appetite is poor, with continued emaciation, having lost about thirty pounds of flesh; the general appearance is progressively worse. The measurements of arm, shoulder and chest, a year after the accident, remain as they were on the first examination. Limited motion is possible, but with very little strength on resistance tests, and practically no grip.

He had been lefthanded and a baseball pitcher. An examination for life insurance a few days before the accident had shown a perfect physique. No neuropathic tendencies can be found in the family. The attacks of spasmodic pain and the seizures have been repeatedly observed by Dr. H. N. McDonald, a very close observer, from whom the case was referred in consultation, establishing their identity as typical attacks of true angina and epilepsy.

The literature of results of injury from powerful electrical currents is very meager and our knowledge of possible effects is very limited. Opinion at present confines them mainly to gross destruction of tissue, general functional shock, or fatal outcome, but such conclusions, in view of our knowledge of the effects of galvanic currents on tissues and functions, are too narrow and our observations too limited. Much must depend on the voltage of the current, the duration of the shock, the possible presence of additional induced currents of very high voltage that may be present and that can not be definitely determined in the individual case.

This young man was in the circuit of a 500-volt current for probably about a minute. The current produced a general neuritis of the entire brachial plexus and the supply to the left chest, and the vagus is undoubtedly in the same condition, giving rise to the angina. In what way the shock or effect of the current has given rise to the epileptic element of the picture, whether by functional or organic injury to the nervous system, can not be determined. The distribution of the anesthesia, not being absolutely anatomical, may be assumed as hysteric in type, but the possibility that a powerful electric current diffusing from the point of contact over the surface may affect the cutaneous nerve endings over an extensive area without involving the entire anatomical distribution of the nerves involved, must be kept in mind.

This brief report is made only as a contribution to the literature of electrical injuries and their results, without reference to the control or outcome of the individual case.

TRAUMATIC NEURITIS AND PERSISTENT BRACHIAL NEURALGIA FROM HYPODERMIC INJECTION.

A large woman, of 52 years, of rheumatic and somewhat neurotic family history, had rheumatic fever several times between her 5th and 23d year. Two years ago she was under a physician's care for gastric ulcer and neuralgia, suffering very severe pain. The physician used morphia freely by hypodermic injection, selecting a very peculiar place to introduce the needle. All the injections were given in the wrists, making scores of punctures. On one occasion, instantly on the insertion of the needle, the patient felt a shooting, burning pain of great intensity run the entire length of the arm, which continued, and was quickly followed by swelling of the arm. This became extreme, with diffuse redness and heat, and great pain and tenderness. Dark red streaks extended up the arm from wrist to axilla. The swelling did not entirely subside for over two months. The pain was continuous, varying in intensity, but the suffering was intense.

She first came under observation about a month later. The arm at this time appeared normal in outline, except for moderate swelling over the tendons of the right wrist, and some loss of substance in the adductors of the thumb. Numbness was present in the little and third fingers. There was complaint of great pain extending up the arm from the wrist to the shoulder, along the course of the ulnar nerve more especially, but also along the median as well. There was decided tenderness along the flexor surface of the forearm. Movements of the arm or hand aggravated the pain, and they were kept as quiet as possible. The pain prevented sleep a great part of the time. Changes in the weather affected the condition profoundly.

She was put on large doses of salophen; lithia was also employed, and chloretone as an hypnotic. Hot salt baths were directed for the arm, and an external application of equal parts of pure guaiacol and olive oil. The constant current was also used three times a week or daily, with long sittings, from forty minutes to an hour, with large electrodes, stabile, from 10 to 15 milliamperes.

Short applications of the current produced little or no impression on the pain. The long sittings invariably diminished and finally relieved it entirely for increasingly longer periods following the sitting. The condition improved pretty steadily, but with occasional exacerbations, until after a little more than a year of treatment the pain had entirely disappeared. The adductors of the thumb were restored; she was sleeping well, and beginning to use the hand quite freely without exciting pain, and recovery was considered practically complete, when one day getting on a street car, it started just as she stepped on the lowest step, throwing her backward. She grasped the handrail to save herself, and, weighing 240 pounds, it gave her arm a severe strain. This caused a return of the intense pain, marked swelling of the entire arm, with a temperature of 100, pulse 90. The pain required heavy sedatives night and day, preventing sleep, accompanied by nausea, and causing marked exhaustion, which still obtain.

The use of the hypodermic needle as employed in this case is, of course, an extreme illustration, but it will serve to point to the fact that subcutaneous medication is used more freely and promiscuously than is at all necessary, and while when properly done the danger of any unpleasant result is remote, it is always a contingency and should be employed much less freely than it is.

This case and the preceding one suggest a thought in reference to the method of employment of the galvanic current. In the writer's experience, applied according to usual routine, for a few minutes, with small electrodes and weak currents, there is no perceptible result. Currents of fair strength, applied with large electrodes for a sufficient length of time to produce a sustained physiologic effect, must manifestly be necessary to produce any distinct therapeutic result.

The effect of changes of weather on many nervous states, and especially on painful conditions, as noted in this case, is very striking; it is not given sufficient attention, and often discomforts both patient and physician.

Another important point illustrated by the last case is the recommendation so often given by the general practitioner to patients suffering from painful conditions of the extremities, to use them all they can. Usually exactly the opposite thing should be done. In most such cases the extremity or part should be kept as quiet as possible and as free as may be from all effort and strain.

ALEXIA FROM CYST CAUSED BY BULLET WOUND—OPERATION—DEATH.*

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The following case is reported simply to illustrate the value of that form of aphasia known as alexia as a localizing symptom, and which led in this case to a successful surgical procedure.

Mrs. T., aged 31, was referred to me by a surgeon for diagnosis, with a view to operation if deemed advisable. Seven years before my examination she was shot in the head, by some unknown person, while riding in a buggy after dark. The bullet entered the skull 4½ inches to the left of the sagittal suture, and ½ inch in front of the binauricular line, proceeding in an unknown direction. She was in bed two months, and for four weeks was semi-conscious and delirious. After getting out of bed she was unable to walk alone for four months. From this time on she was able to walk with a limp, the right leg being distinctly paretic. For several months after the injury she was unable to talk, and since then has had more or less speech disturbance constantly.

A few months before she came to the hospital she had an abscess in the right ear, which was preceded by severe occipital pain, relieved by the spontaneous discharge of pus. No other change had taken place in the patient's condition until within a few weeks, when the symptoms all began to grow worse, and continued to do so up to the time of my examination, at which time operative relief had been sought. There was severe headache, with marked increase of speech disturbance, and some increase of paretic weakness of right side. The history of the case, and the obviously downward tendency, pointed to an inevitably fatal termination in the near future, and appeared to justify the hazard of an attempt to relieve by surgical procedure if the localization could be made with sufficient accuracy. A careful study of the case elicited the following data: There was marked paretic weakness of the right hand and right arm. The patient could walk, but limped badly. The dynamometer registered eight in the right hand and twenty in the left. Right side of face was paretic. The right knee-jerk was grossly exaggerated, the left normal. The right elbow-jerk and jaw-jerk also exaggerated. There was no ankle clonus. Sensation was greatly impaired throughout the right side. On the right side of tongue she could not recognize two points of esthesiometer ¾ inch apart. Over the right extremities and side of trunk she could not recognize two points of contact anywhere, at any distance.

Vision was normal in both eyes, and the visual fields unimpaired. Ophthalmoscopic examination showed a perfectly normal eyeground. The sense of smell was normal, but that of taste was slightly impaired. There was severe headache localized in upper and back part of head on left side. The mental condition was not very good. There was a certain degree of dulness, and considerable emotional instability.

The highest interest, however, attached to the speech disturbances. She could recognize the different letters of the alphabet, and would correctly spell any word shown to her; but could not recognize and pronounce, after spelling it, the simplest monosyllable. Such words as *was, in, horse, pencil, cat,* were perfectly meaningless collections of letters, no matter how often she spelt them over and studied them. If, on the other hand, I would vocally spell the word to her she would pronounce it at once, and easily apprehend its meaning. There was a certain degree of partial agraphia. Many words she could write correctly, while others she could not write at all. The individual letters could be made without difficulty, although the writing had to be done with the left hand, on account of the paretic weakness of the right. Her ability to combine the written letters into words, however, seemed to depend largely upon the simplicity of the latter. Her first name, for instance, was *Anne.* This she could always write without an error. Her family name, however, had four syllables, and it was impossible for her to write this at any time. I can not quote her efforts, as I do not wish to make identification possible for several reasons, one of which will be apparent in the sequel. The first syllable of the name was always written correctly, but the next letter was nearly always the last letter of the second syllable, while succeeding letters were entirely haphazard. She spelt Ohio, the state in which she lived, without the *i.* When her atten-

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Nervous and Mental Diseases, and approved for publication by the Executive Committee: Drs. Frederick Peterson, Hugh T. Patrick and H. A. Tomlinson.

tion was called to it she thought there was something wrong with the spelling, but could not tell what it was. She was unable to spell the simplest monosyllables which I would pronounce to her, although if I spelt the word she would correctly pronounce it.

The diagnosis of a destructive lesion of the angular gyrus was made. Pathologically it was thought to be either a cyst or an abscess, resulting from a chronic latent infection introduced with the bullet, with the probabilities in favor of the last named condition. The more diffuse lesion of the motor tract was believed to be the result of secondary inflammatory or degenerative processes, partial in character, though large in extent.

The diagnosis of a cortical lesion, and therefore one susceptible to exploratory procedure, and possibly open to operative relief, was made on the following grounds, both of exclusion and inclusion. The internal capsule was excluded as the seat of the lesion, because it was not believed possible that a traumatism could be produced here by a bullet, which would be so limited in final results as indicated by the symptoms in this case. It could scarcely be subcortical, for exactly the opposite reason; but aside from that there was another fact, which, taken independently, proved its cortical location, namely, the presence of alexia without hemianopsia. Had it been subcortical, and the alexia the result of injury to the fibers leading down from the cortex of the angular gyrus, the fibers passing forward from the cuneus, which lie immediately beneath it, would certainly have been destroyed, and homonymous hemianopsia would have resulted.

As the patient was going steadily downward, an operation was recommended with the hope of arresting the progress of the symptoms, and possibly palliating those already existing.

The surgeon, therefore, removed a small section of the cranial vault at the point which I indicated and immediately beneath it lay the bullet, with a small spiculum of bone attached to it, carried, of course, from the point of entrance. It lay embedded in the cortex, and adjoining it was a cyst of irregular shape and about 1¼ inches in diameter, and which was evidently the cause of the progressive character of the symptoms. The bullet and spiculum of bone were removed, the cyst evacuated, and the operation completed without any event worth noting from a neurological point of view. There was some laceration of the cortex, which bled rather freely, but was apparently completely arrested before the operation was closed.

I saw the patient frequently during the day and evening at the surgeon's request, and about 9 p. m., some ten hours after the operation, I found the pupil on the side of the operation greatly dilated—the condition known as Hutchinson's pupil—and at once notified the surgeon that there was pressure from concealed hemorrhage, and that an exit should be provided by opening the dressing at once. At that time there was no coma or other evidence of increased general intracranial pressure. The patient's condition was extremely satisfactory, considering the circumstances. To my great regret the advice was unheeded, and during the night the patient passed into coma and died before morning. No autopsy could be secured.

The occurrence of alexia, as an isolated type of aphasia, and especially occurring as a sequel of traumatism, appeared to me to be probably of sufficient rarity to make it worth while to put the case on record. While the occurrence of Hutchinson's pupil under such circumstances is sufficiently well understood, yet the tragic lesson which it taught in this case ought at least to be long remembered by the surgeon in charge. There is every reason to believe that if the warning had been heeded the patient would have had an excellent chance for recovery from the operation, and considerable symptomatic relief.

THE ECONOMIC LIMITATIONS OF THE VISUAL ACUITY IN VARIOUS TRADES AND PROFESSIONS.*

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MILWAUKEE, WIS.

The central acuity lies within well-known physiologic limits. When it falls below this, the function itself is damaged, but the conditions met with in practice are not such that the physiologic and earning limitations of the central visual acuity are interdependent; for instance, science calls an individual blind only when perception of light has entirely disappeared, but in actual practice he is blind if the faculty of sight has been weakened to such an extent that the organ of vision can not be used to earn a living. Thus the meaning of blindness as used in daily life is much narrower than that of science.

Now and then extremely great demands may be made upon certain organs which may reach to the highest ability. In actual practice we are satisfied with the amount of labor which does not strain the powers. There is hardly any vocation which demands the extreme limit of sight (according to scientific figures) as a condition of success, and in each trade a great many individuals may be found who have comparatively poor sight but the same earning ability as those with normal eyes. Neither the lowest nor the highest points of scientific visual acuity correspond with those used in business; the lowest point of the latter is not as low as the lowest laid down by science, while the highest point of the functional range that may be regarded as normal must be considered below the highest scientific standard.

Certain estimations of the working acuity have been made from experience, and thus we have determined that ordinary coarse work, such as that of a farmer or day laborer, does not require more than one-half the normal acuity as a condition of success; for instance, if a day laborer should suddenly have his vision reduced to not more than 0.50 (one-half), he would be able to go on with his work; but, if a skilled mechanic would suddenly lose this amount of vision, he would have to stop, as he is used to work with clear retinal impressions; but if he would only lose one-quarter of his visual acuity he would yet be able to do all his work, as 75 per cent. would be sufficient for all ordinary demands. If the common laborer's vision should drop to less than 0.05, he would be blind for all working purposes, and the same might be said of the skilled artisan if his vision drop below 0.15. Therefore, out of these four limit values we have constructed two ranges within which the professional or economic limits lie. One of these ranges would have its highest limit 0.75 (three-quarters) as the lowest 0.15 (one-seventh); while the other range would be between 0.50 (one-half) and 0.05 (one-twentieth) of the normal scientific standard for visual acuity. It is not necessary that the maximum

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee of the Section: Drs. J. A. Lippincott, Casey A. Wood and H. V. Würdemann.

and minimum limit values exist in both eyes. It is sufficient that they may be shown in one eye, the other having the lesser acuity than that which we have declared as absolutely necessary for professional visual demands. According to this standard tables are submitted which divide the followers of the different trades and professions into two groups.

Group 1—Trades requiring higher degrees of visual acuity; range 0.75 to 0.15.

TRADES AND PROFESSIONS.

The higher professions.	The textile industry.
Medicine.	The silk industry.
Theology.	Paper workers.
Law.	Leather workers.
Art.	Garment makers.
Engineering.	Printers.
Students of all professions.	Marine employes.
Fine mechanics.	Mine workers.
Iron and steel workers.	Railway and steamship employes (including city roads).
Rolling-mill workers.	
Machinists and metal workers.	
Precious-metal workers.	Soldiers and sailors.
Musical instrument makers.	Telegraph operators.
The linen industry.	Skilled labor generally, etc.

Group 2—Trades requiring lower degrees of visual acuity; range 0.50 to 0.05.

Glass blowers.	Sugar factory employes.
Mine workers.	Brewers and maltsters.
Quarry men.	Tobacco workers.
Builders.	Chimney sweeps.
Pottery makers.	Street railway employes (horse cars).
Brick makers.	
Workers in mechanical industries.	Employes of elevators and wine cellars.
Employes in gas and water works.	Teamsters.
	Bargemen on inland waters (rivers, etc.)
Paper makers.	
Wood workers.	Farmers.
Mill employes.	Day laborers.
Manufacturers of food articles.	Unskilled labor, etc.

Individual members of certain trades do not have exactly the same visual demands made upon them. This fact must be remembered and all the members of the same trade not judged by the same standard. Thus the railway employes may be properly divided into two classes.

It is advisable to reach some definite agreement as soon as possible, as hitherto there has been a disposition among oculists to consider the scientific results of the examination of the visual acuity as the basis for the valuation of the conditions arising in practical life. If the estimation of the results of the amount of damage arising from ocular injuries is to be made in a just manner according to actual conditions, this custom must be abandoned.

Our views regarding the difference between the scientific and working standards of visual acuity can claim far more extensive practical consideration than that which relates alone to the subject in hand of ocular injuries. All professions or vocations which make admission dependent upon a degree of vision would do well to remember that practical visual acuity and that of the scientific standard are entirely different things and that an individual may have, for working purposes, a full amount of vision who by the scientific standard shows a deficit. In the German army "a small disability which does not destroy the general fitness," i. e., V. = 0.50 allows of the recruit being received; a visual acuity in both eyes between one-half and one-fourth is called "conditional," and if one-fourth or below is called "absolute unfitness."

Magnus' suggestions have been accepted since 1893 in the Breslau Railroad Company. Their requirements do not now include normal acuity of vision by the scientific standard, but only "sufficient" visual acuity. The same conditions have been met with in a similar manner in other portions of Germany. In America the tendency is to demand the highest visual qualifications from prospective railway employes; the full scientific standard, 1.0 (20/XX), being required by many railroads and being deemed as essential by the consulting oculists of the principal systems.

Allport recently inquired into the conditions existent in the United States relative to the vision required by railway employes and comes to the conclusion that it is well to divide these employes into two classes: Class A, in which the vision should be at least 20/XXX (0.66) in one eye and 20/XL (0.50) in the other; Class B, in which the vision should be at least 20/XL (0.50) in one eye and 20/L (0.40) in the other. In the first class are to be put: Engineers, firemen, brakemen, conductors, switchmen, signalmen, switch-tenders and engine-dispatchers. In Class B: Track foremen, bridge foremen, crossing flagmen, bridge tenders, gatemen, train baggagemen, telegraph operators, station agents and station baggagemen. Other examiners require much higher qualifications. We are, however, fast coming to the conclusion that a practical working or economic vision should be required for new men, i. e., 0.75, and that they should not have any grade of refractive error which would ultimately render their distant vision poor without glasses.

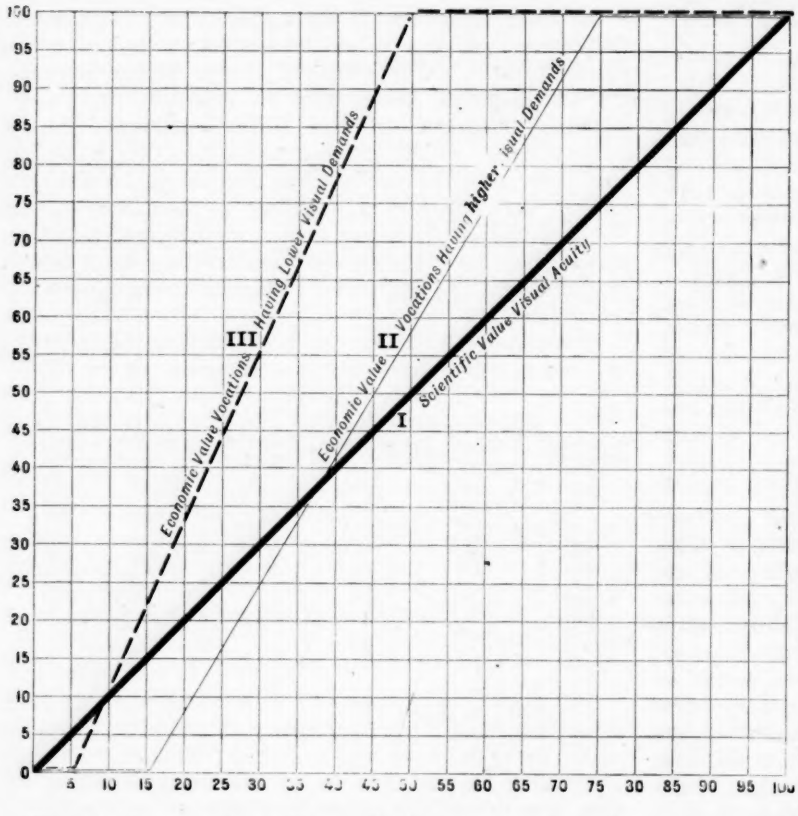
The following table shows the scientific standard for the visual acuity converted into economic terms:

	I. Economic standard for vocations demanding higher degrees.			II. Economic standard for vocations demanding lesser degrees.	
Scientific standard.			Scientific standard.		
0.75	1		0.50	1	
0.70	0.9166	11/12	0.45	0.8888	8/9
0.65	0.8333	10/12	0.40	0.7777	7/9
0.60	0.750	9/12	0.35	0.6666	6/9
0.55	0.6666	8/12	0.30	0.5555	5/9
0.50	0.5833	7/12	0.25	0.4444	4/9
0.45	0.500	6/12	0.20	0.3333	3/9
0.40	0.4166	5/12	0.15	0.2222	2/9
0.35	0.3333	4/12	0.10	0.1111	1/9
0.30	0.250	3/12	0.05	0.000	
0.25	0.1666	2/12			
0.20	0.0833	1/12			
0.15	0.000				

In calculating the amount of economic damage from ocular accidents the visual acuity should always be estimated from the economic standard. This may be readily done by the use of the above table, or by marking the economic values on our ordinary Snellen test cards. If we desire to estimate them ourselves, the economic valuation of certain visual acuities found by the scientific measurement, we may use the accompanying diagram, which offers an easy method for this transposition.

We show, figuratively, the relations between the scientific and the economic visual acuity in Plate I. In this drawing the degrees of vision in the abscis and the ordinate axis are marked at intervals of 0.01, so that five of these cards are always taken together, the abscis as well as the ordinate axis are divided by this into 20 equal parts. The curve of the scientific visual acuity is marked as a black line (1) and because this progresses gradually it has been equally divided. We are perhaps less exact in marking the deviations of the yellow and red lines or curves, which stand for the economic visual acuity, as we must admit that the working acuity is not diminished or enhanced in exactly the same manner as the scientific. Economic vision will not suffer very much if the acuity falls off 0.05, because the difference between 1 and 0.95 is so little that it will scarcely be noticed.

But, if the acuity falls off further, a point will soon be reached where every loss affects the working capacity, and if the vision falls below this point, for instance, to 0.05, then it has no economic value whatever, and when it reaches this lowest point and further depreciates, vision will be professionally of no importance. Corresponding with these facts, the two curves of the economic visual acuity should not be marked as grades; the beginning and end of the curves should deviate, as we have shown; but these deviations are so little that we have divided them similarly to that of the scientific standard. The thin line (II) shows the course of economic vision for higher, and the dotted (III) line for trades having lesser demands. As the drawing shows, both curves start together with the abscis-axis, and then when the climax of the demands is reached, they run parallel.



We also show on the ordinary Snellen test cards, both distant and near, the relations of business visual demands to the scientific standards.

The normal visual requirements of trades and professions should always be ascertained before examining applicants for admission, advancement or retention in service. If we adhere to the highest scientific requirements in certain trades many valuable men would be prevented from work and both the workman and the business injured thereby.

By requiring "normal" or "average" visual acuity we thus conserve both interests and yet sufficiently protect the public.

Bilateral Ovariotomy During Pregnancy.—Löwenberg relates in the *Cbl. f. Gyn.*, of December 21, the case of a patient in the third to fourth month of pregnancy who exhibited for several days symptoms indicating torsion of an ovarian tumor. The ovary had to be removed entirely on one side, and a large portion was resected from the other ovary, and yet the pregnancy continued undisturbed.

WHAT AMOUNT OF VISUAL DEFECT SHOULD DISQUALIFY IN RAILROAD SERVICE?*

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CHICAGO.

(*Continued from* THE JOURNAL *A. M. A., Oct. 13, 1901.*)

At the last meeting of the Ophthalmological Section of the American Medical Association, I presented a report on the above subject, accompanied by tabulated statistics. In order to accumulate material for this report, I sent letters of inquiry and a question blank to every railroad in the United States, Canada and Mexico, operating over one hundred miles of road; 244 railroads were thus addressed, covering 205,638 miles of road. I received replies from 64 roads operating 90,950 miles of road. This left a large amount of mileage unaccounted for, and in order to endeavor to supply this deficiency, during the past year I communicated with all those roads failing to reply to my first communication. I received replies from 48 roads, making a total of 112 roads that have replied to my letters of inquiry. The roads thus heard from during the past year cover a mileage of 56,888 miles, making a total of 147,838 miles that are now accounted for. This leaves a deficiency of only 57,800 miles not covered in the combined report of the last two years; or, to put it differently, out of 244 roads to whom letters of inquiry have been sent, 132 have not seen fit to reply. These roads, I am glad to say, are mostly small roads, and the reports which I submit to you cover the requirements of most of the large railroad arteries of North America.

In itemizing the different points covered by my reports, I now beg leave to combine the replies received last year and those received this year.

I find, then, that out of 112 roads reported, 77 require some kind of a systematic eye and ear examination of those employes who are actively engaged in running trains, and in giving and receiving signals; 29 of these roads require such examinations to be made by regularly appointed railway surgeons; 31 allow various kinds of instructed railway employes to make the examinations; 9 roads send doubtful cases to an eye and ear surgeon; 16 roads require examinations to be made by regularly appointed eye and ear surgeons, and 4 allow such examinations to be made by the medical directors of Railway Relief Associations.

In answer to the question: "Do you require re-examinations from time to time, and if so, at what intervals or under what circumstances?" I find that 1 road requires re-examinations every six months, 7 roads require re-examinations every year, 21 roads every two years, 9 roads every three years, 2 roads every four years, 19 roads require re-examinations when it is deemed advisable, and especially upon promotion and after accidents and illnesses; 3 roads require re-examinations on promotion only.

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee of the Section: Drs. J. A. Lippincott, Casey A. Wood and H. V. Würdemann.

Concerning the question: "Do you require perfect vision, color sense and hearing in new employes? And what concessions do you permit from a perfect standard in the case of old employes?" I find that 26 roads require perfection, and allow no concessions to old employes, 41 roads require perfection from new applicants and allow various concessions to old employes according to circumstances.

Concerning the question: "How long must a man work for your road before you call him an old employe?" I find that 2 roads call a man an old employe as soon as he is enrolled in the service, 7 roads require one year's service, 3 roads two years, 12 roads three years, 12 roads five years, 7 roads ten years, 3 roads fifteen years.

Concerning the question: "Do you permit old employes to wear glasses for distance when on duty?" I find that no road allows new applicants to wear glasses for distance in order to bring vision up to a normal standard, 74 roads allow old employes to wear glasses for distance, 12 roads do not allow glasses to be worn for distance at all.

My views upon this important subject were fully expressed in the paper which I had the honor to present before this Section last year. I, therefore, have nothing further to say on the subject.

REPORT OF COMMITTEE.

Mr. Chairman and Members of the Ophthalmological Section of the American Medical Association:

Your Committee, appointed three years ago, with the view of framing resolutions for the regulation of the eye and ear requirements of transportation employes, were unable two years ago to bring in a unanimous report. The committee was, therefore, requested to retain its membership and endeavor to report at the following meeting. Meanwhile the committee was led to believe that action upon this subject would be taken one year ago by the International Medical Congress meeting in Paris. It was, therefore, deemed wise to wait until the committee of the International Congress submitted its report, feeling that valuable ideas might be therein contained, which would enable us to improve the character of our own work. The committee, therefore, did not report at the city of Columbus, and since then, although the chairman of this commitee has endeavored with all possible assiduity to ascertain something concerning the nature of the work accomplished along these lines by the International Congress, he has been absolutely unable, up to the present time, although inquiry has been made along every possible avenue, to ascertain whether any work of this nature was accomplished or not. It, therefore, seemed useless to wait for the action of our European confréres, believing that it is not necessary for a country which leads all other countries in its transportation facilities to await the action of other nations. Your committee, therefore, begs leave to submit to the Section the following resolutions, which have been unanimously adopted and which is hoped will also be adopted by the American Medical Association, and then correctly placed before the proper railroad authorities of North America.

This work should be superintended by this Section.

SECTION 1. The essential principle to be advocated is that railroad corporations shall require a scientific and correct examination of the eyes and ears of those employes at all to be concerned with the active operating of trains, or in giving or receiving signals.

SEC. 2. Such *primary* examinations should, whenever possible, be made by regularly appointed eye and ear surgeons, and this point is emphatically urged, especially as the expense of a first examination may always be borne by the applicant; but if such a course is not deemed expedient, the company's surgeon, aided by his medical assistants, might conduct them, with the understanding that all doubtful cases shall be sent to a regularly appointed eye and ear surgeon.

SEC. 3. There shall be two general standards of visual and aural requirements, viz., those for new men hoping to enter the service, and to be actively engaged in the operation of trains, and in giving and receiving signals; and secondly, those men engaged in similar work, who have been uninterruptedly in a company's service for five years, and who have, therefore, a right to be called old employes.

SEC. 4. New men shall be required to possess perfect color sense. They shall also have a vision of 20/20 in each eye, without glasses, and have healthy eyes, and not over one diopter of hypermetropia. They shall also hear the whispered voice at 20 feet in a quiet room, and have healthy ears.

SEC. 5. For the purposes of graduated requirements old employes shall be divided into two classes as follows: Class A—Engineers, firemen, conductors, brakemen, switchmen, signal-men, switchtenders, and engine dispatchers. Class B—Track foremen, bridge foremen, crossing flagmen, bridge tenders, gatemen, train baggagemen, telegraph operators, station agents, and station baggagemen.

Employes enumerated in Class A shall not be retained in such positions if vision sinks below 20/30 in one eye and 20/40 in the other, or if the whispered voice can not be heard in a quiet room at 15 feet by one ear and 10 feet by the other. Employes enumerated in Class B shall not be retained in such positions if vision sinks below 20/40 in one eye and 20/50 in the other, or if the whispered voice can not be heard in a quiet room at 10 feet by both ears. Employes, and especially engineers and firemen enumerated in Class A, must reach the visual standard without glasses and will not be allowed to wear distance glasses when on duty. Employes enumerated in Class B may reach the visual standard with glasses, and will be allowed to wear glasses when on duty, and will be required to do so if the wearing of glasses is necessary to bring vision up to the proper standard, and shall always be required to carry an extra pair of glasses when on duty in case of accident to one pair. All employes shall have perfect color sense.

SEC. 6. Re-examinations shall be made of all men every three years, and after a severe illness, or accident, or any occurrence which seems to cast doubt on the visual and aural capacity of an individual. Re-examinations shall also be made more frequently on men known to be excessive users of tobacco, or to be suffering from syphilis, albuminuria, diabetes, or acute or chronic eye and ear diseases. Men shall always be re-examined before promotion.

SEC. 7. Men known to be excessive users of liquor shall not receive employment.

Respectfully submitted,

FRANK ALLPORT, M. D.,
Chairman of Committee.

92 State Street.

DISCUSSION ON PAPERS OF DRS. WUERDEMANN AND ALLPORT.

DR. LEWIS H. TAYLOR, Wilkesbarre, Pa.—This report has stated very clearly what we ought to have and should expect of railroad employes. It seems to me, however, that in many cases there is a lack of understanding and a lack of common sense in dealing with this matter on the part of railroad officials. I have in mind the case of a man who was dismissed from his place as engineer, a position he had filled for many years, who had excellent vision in one eye but was cross-eyed and had been for years. He wished me to operate and improve his vision if possible. I operated and got a good cosmetic effect, but, of course, could not improve his vision very much in the amblyopic eye, and he was not allowed to wear glasses. I have examined a number of others dismissed under somewhat similar circumstances, because the vision of the two eyes was not equal. It seems to me we should try to correct the false impressions that have given rise to the prejudices some railroad officials seem to have. I find that even men employed about the yards, in laboring work, are not allowed by some roads to wear glasses. I think it is a good work that the Committee is doing in educating the employes to a proper consideration of what is necessary, but we should also endeavor to educate their employers.

DR. H. B. YOUNG, Burlington, Iowa—There is an old saying to the effect that not everything that is true is expedient;

ADDITIONAL STATISTICS ON "WHAT AMOUNT OF VISU

CONTINUED FROM JOURNAL OF AMERICAN M

No.	Railroad.	Miles.	Are eyes and ears systematically examined?	If so, what class of employes? And do you require same standard for all classes?	Are such examinations made by an eye and ear surgeon, a general surgeon, or some railr'd employe?	Do you require re-exa tions from time to and if so, at what val or under wh circumstances?
..	.....	Forward, 90,950	.....	.....	.....	.....
65	Kansas City, Fort Scott & Memphis	966	Yes	Train and enginemen	By an eye and ear surgeon.	New men and every years thereafter.
66	Burlington, Cedar Rapids & Northern.	1,123	Yes	Employes in train service must have perfect vision. Station employes—vision can be corrected by the use of glasses when necessary.	General surgeon and division surgeon.	No .....
67	Rio Grande Sou.	180	No.	We require examinations only when we suspect defects	Local surgeon	No .....
68	Carolina & Northwestern.	109	.....	We examine train employes, but not very exacting as compared with larger lines.	By officer employing.	Not unless have some son for it.
69	Boston & Albany.	389	Eyes, yes; general hearing tested.	All employes whose duties at any time may call upon them to observe signals.	Railroad employes	Examination on em ment; no re-examina
70	San Francisco, San Joaquin Valley.	304	Yes	All engine, train and yardmen, crossing watchmen and signal towermen must be examined. Same standard for all.	Eye and ear surgeon.	Re-examinations every years.
71	Southern California.	499	Yes	Same as above	Eye and ear surgeon	Re-examinations every years.
72	Chicago, St Paul, Minn. & Omaha.	1,522	Yes	Engineers, firemen, conductors and brakemen..	General surgeon .	No .....
73	Texas Central. .	187	Yes	Our examinations extend to engineers, firemen, conductors, brakemen, machinists, carpenters, round house men, etc. No.	Railway surgeon..	No, unless the nece calls for it on accou disease or injures.
74	Mexican Southern	278	No	.....	.....	.....
75	Missouri, Kansas & Texas.	2,197	Yes	All employes in train service, including switchmen . .	Eye and ear and general surgeons	Re-examinations ma times of promotion.
76	St. Louis Southwestern.	1,238	Yes	All employes in any branch of service where the use of signals or the movement of trains is involved are required to pass an examination on hearing, visual power and color perception. The same standard required from all classes of employes.	By trainmaster, ass't supt , supt. and in a few remote cases by the local surgeon.	Re-examinations req from time to time; rule; limit of 3 years able, except when c for on account of dent, illness or promo
77	Duluth, South Shore & Atlantic	586	Yes	Engineers and conductors	Traveli'g engineer & chief despatch'r	Every 3 years. .....
78	Pacific Coast.	210	Yes	Engineers, firemen, conductors, brakemen, switchmen and flagmen.	General surgeon .	No; unless reason to sight or hearing imp
79	Seattle & Interna	166	Yes	Trainmen, engineers and firemen. Same standard. .	Eye and ear surg'n	Yearly .....
80	Evansville & Terre Haute.	167	No	.....	.....	.....
81	Duluth & Iron Range.	161	No record kept .	We do not examine any employes in this respect regularly, or require such examinations.	General surgeon, if at all.	If we know of person h defect, exam. each y
82	Gulf & Ship Island	143	No	.....	.....	.....
83	Elgin, Joliet & Eas.	195	No	.....	.....	.....
84	Chi , L. S. & Eas.	366	No	.....	.....	.....
85	Delaware & Hud.	747	Yes	Engineers and firemen only . .	An employe. . .	Not statedly; as indic
86	Georgia	307	Yes	All trainmen	Eye and ear surg'n	Two years .....
87	Central Ontario .	114	No	.....	Not examined. . .	.....
88	Erie.	1,188	Yes; when employed.	All those engaged in train service and who have to give and interpret signals. Same standard.	Division officer; if defects are found, surgeon examines	Yes, if thought nece in individual cases.
89	Union Pacific . .	2,985	They are	Employes are divided into two classes. Class A includes conductors, brakemen, engineers, firemen, signalmen, crossing flagmen, bridge tenders, switch tenders, switchmen, gatemen, train baggagemen, engine despatchers, bridge and track foremen. Class B, agents, operators, baggagemen and other station employes. Standards for the two classes are not the same. See Question 6.	General surgeon; if defects are found the cases are referred to eye and ear surgeon.	We do; all employe train and station se were examined, begin February, 1900. We pect to re-examine 2 years.
90	Central, of Georgia.	1,545	No	Those in operating department in fourth division at Columbus, Ga.; only applicants for position in operating department; first division at Savannah; those described in Class A, page 7.	Company's surgeon at place of examination.	Only when certain dents bring into que the reliability of an ploye.
91	Virginia & Southwestern.	118	Yes	Enginemen and trainmen; same standard, both classes of service.	Employes; report to superintend't	If we deem it necessary
92	Chi., Mil. & St. P.	6,320	Yes	Train and enginemen; yes.	Employe	No regular intervals.
93	Boston & Maine .	1,767	Yes	All men in train service having to do with signals . . .	Employe; doubtf'l cases by specialist	As often as once in 2
94	Kansas City, Memphis & Birm.	282	Yes	All actual employes in train service are required to pass the same examination.	Eye and ear surgeon.	Yes, every 3 years.
95	.....	.....	.....	.....	Specialist, when made.	No .....
96	Pere Marquette. .	1,884	.....	This road is now in process of organization; I am preparing a system of examination for all.	Employes; not yet in operation	.....
97	Burlington	7,357	Yes	All employes handling signals in the moving of trains	Medical examiners of re ief department.	In all cases every 3 y defective cases every
98	Delaware, Lackawanna & Western.	900	Yes	Employes in any way connected with train, engine and yard service or with maintenance and operation of fixed signals. crossing flagmen, bridge and tunnel watchmen, etc; same standard.	Company's oculist.	Yes; 1 to 3 years, accor to age.
99	Interoceanic, of Mexico.	555	Eyesight only . .	Engineers only..	Railway employe	No rule .....
100	Chattanooga, Rome, & Southern.	156	No	We have no regular requirements. If we find that the sight or hearing of an employe in train service is defective we have examined.	We have some of our railroad surgeons examine	We only have examina made when there is son to suspect defect
101	Mexican National	1,218	No; men in train and yard service exam'd by trans. dept. officers.	.....	.....	.....
102	Central, of New Jersey.	685	Yes, new men; old men when they show weakness.	Enginemen, firemen, conductors, brakemen, operators, etc.; yes.	Regular examiner, assisted by trainmaster.	No; we accept as stated No. 2. (Are eyes and systematically exam
103	New York Central & Hudson River.	2,881	Yes, certain employes.	Enginemen, firemen and conductors	Superintendents .	From time to time; dep ing on prev. exam and
104	Canada Atlantic .	178	They are not . . .	.....	Professional when necessary.	No regular re-examinat

DEFECT SHOULD DISQUALIFY IN RAILROAD SERVICE."

CAL ASSOCIATION, VOL. XXXV., NO. 15, PAGE 920.

Do you require perfect vision, color sense and hearing in new employes? And what concessions do you permit from a perfect standard in the case of old employes?	How long must a man work for your road before you call him an old employe?	Do you permit old employes to wear glasses when on duty?
. . . . .	. . . . .	. . . . .
Perfect vision, color sense and hearing for new men; and perfect vision and color sense and one-quarter or better in each ear.	About one year	Yes.
Yes. No concessions.	No rule	Yes, in certain lines of work.
Yes. It has not been necessary up to this time to make any concessions	. . . . .	No.
No. Only to that extent necessary to distinguish by sight and hearing signals under practical conditions.	Three to 5 years	Old men.
Perfect vision and color sense required in new employes. Old employes judged according to the requirements of the position they occupy.	One year	Enginemen, no; trainmen, in some instances.
(1) Yes. (2) Certain concessions are made in case of old employes wherein no risk is involved.	No rule	Yes.
(1) Yes. (2) Certain concessions are made in the case of old employes, wherein no risk is involved.	No rule	Yes.
New employes—yes. Old employes—cases passed upon individually, consideration being given to previous record, ability, etc.	We consider men in employ previous to use of present rules old employes	In individual cases as above.
As nearly perfect as possible ir new employes 20/20. In old employes 20/30 or 20/40.	About five years	Yes.
. . . . .	No rule	No.
See circular hereto attached.	We have no rule covering this.	See circular.
Perfect vision, color sense and hearing is required in all new employes. In the case of employes who have been in the service a year or more, or were in our employ at the time the system of examination was made effective, we have accepted 20/30 in one eye and 20/40 in the other, without glasses, but in the case of any defect in color sense or serious defect in hearing, relieve the employe.	One year	Yes.
Perfect for new employes. 5/20 from perfect standard in old employes. .	Three years	Yes.
New employes must be perfect. Old employes may wear glasses.	Three years.	Yes.
Yes. Such as may be due to age, but distant vision must be normal . .	Not stated	Yes.
. . . . .	No rule	None of them do.
Have no special requirements in this regard	About 10 years	No rule, but few do wear glasses.
In all employes.	No rule.	
. . . . .	Two years.	Yes.
. . . . .	Two years	Yes.
Some concessions in case of old employes	No rule	Yes.
Yes. Must have perfect vision if it can be had with glasses	Adopted the plan 3 years ago	Yes.
Yes	Ten years	No.
Yes. Old employes permitted to wear glasses if vision can be made normal thereby.	No rule - probably 15 or 20 years. . . .	Yes.
Vision requirements for Class A.—Normal in one eye and one-half normal in the other. Class B.—Two-thirds normal in one eye and not less than 20/70 in the other, without glasses. Hearing for both classes, normal in one ear and three-quarters normal in the other. Normal color sense required in both classes. Applicants for promotion in Class A must be re-examined. Concessions permitted from a perfect standard in the case of old employes are determined by a Board consisting of General Manager, Supt. transportation, Supt. Machinery, Supt. Telegraph and Chief Surgeon, who pass upon each individual case and take such action as is deemed advisable. In cases where the defect is serious and can not be corrected by the aid of glasses or surgical appliances, the employe is either relieved from service or transferred to another occupation or to branch line service, where his defect will not jeopardize the interests of the company. This class of employes are required to undergo re-examination every three or six months, nature of the case determining frequency of the examination.	No stated length of time. All employes examined at our biennial examinations will be considered "old employes," and the defective men disposed of as above stated.	We do.
This is left to the discretion of the examining surgeon.	No ruling on this point.	I have been told that the officials do allow this.
Perfect new employes. Provided vision can be made satisfactory by glasses, permission is given for their use.	Five years.	Yes.
Yes. In case of old employe glasses must bring his sight to normal . . .	At least 15 years; have no fixed rule. .	Yes.
I. Yes. 2. Depends on nature of service	No rule	Yes, except engineers.
Vision new employes perfect. Old employes 20/20 (may use glasses). Hearing, new employes, 24/48; old employes, 12/48.	Six months	Yes.
No. Examined as to 1, 2 and 3 (vision, color sense, hearing), unless for special reasons.	Three or years	Yes.
. . . . .	. . . . .	. . . . .
In engine service, normal color sense, hearing and normal vision in each eye. Train yard, etc., normal color sense, normal hearing, at least normal vision in one eye and not less than one-half normal in the other eye. For men in service each case handled as an individual case.	Can not say	Yes, for reading train orders only in engine and train service.
Yes. Old employes with defective vision only permitted to wear glasses fitted by Company's oculist.	. . . . .	Yes.
We require correct distinction of figures and colors at given distances. .	No rule	No rule.
See answer to No. 5. (Do you require re-examination from time to time and if so, at what intervals or under what circumstances?)	We have no fixed period.	Yes, we would do so, though I believe we have only a few office men using glasses.
No.	Three years or more.	Yes.
Yes. Normal	Ninety days	Yes.
See book of instructions.	Opinions differ as to when a man should be called an "old" employe.	Enginemen or firemen, not permitted to wear glasses; conductors, yes.
Have not arranged for examination. Expect to do so at an early date .	Have no age limit	No.

No.	Railroad.	Miles.	Are eyes and ears systematically examined?	If so, what class of employes? And do you require same standard for all classes?	Are such examinations made by an eye and ear surgeon, a general surgeon, or some railr'd employe?	Do you require re-examinations from time to time, and if so, at what interval and under what circumstances?
105	St. Louis and San Francisco.	1,660	No	Vision test is made of employes in train service if any doubt of their vision being defective.	Competent oculist	No.
106	Houston E. & W. Texas, Houston & Shreveport.	229	Yes	All trainmen, engineers, firemen, conductors brakemen.	Surgeon at hospital.	Expect to examine once every 12 to 18 months.
107	Rio Grande Western	599	Yes	Only trainmen and enginemen; same standard required	Surgeon or oculist	Started last May, and they have not been re-examined
108	Ohio River	266	Yes	Engineers, firemen, brakemen, conductors, yardmen, switchmen; same standard.	Chief surgeon; eye and ear surgeon	Annually; examine all employes on entering service
109	Washington County.	137	Yes	Conductors, baggagemasters (train), brakemen, firemen, enginemen, yardmen, flagmen and signalmen; same standard for all.	Regularly appointed eye and ear surgeon.	Every 3 years; after a severe illness or accident which may affect sight or hearing
110	Southern	6,415	Yes	Engineers, firemen, conductors, flagmen, brakemen, yardmen and hostlers.	Designated officer of the company.	Every 2 years, or oftener if it becomes necessary
111	Pennsylvania.	4,130	Yes	All who must govern their actions by our signals; the same standard for all.	Division superint. thro' employes	No regular intervals; before promotion and after accidents or serious illness.
112	Texas Midland.	125	No	No examinations are made	None made	We do not
	Total mileage.	147,838				

and on this ground I am opposed to the adoption of our Committee's report. I think that for the present we should consider less the purely scientific aspect of the question and look at it more from the practical standpoint. When we come to do this we will get more coöperation from the railroad officials. We have got to take into consideration two things, and the first is that the employe upon whom the brunt of this burden will fall is the engineer. Now, on most of the railroads the engineer is an old employe; has been in service at least ten or perhaps twenty years (before vision tests were thought of); may have a record for efficient service without accidents; and yet as compared with the standards set up in this report his vision may be faulty. In other words, the service records of the men with 20/40 or perhaps 20/50 may compare favorably with those having 20/20 vision. The second is that investigations of accidents have not shown that faulty vision was the essential factor save in a few instances. I believe that the railroad officials are interested in this question more than we have given them credit for; and in the support of this I will say that, with the approval of the Assistant Superintendent of Motive Power (now superintendent) of the C., B. & Q., I have made some practical observations on the visual requirements of trainmen. In the past six months I have ridden some hundreds of miles on the front end of the train; and I have tried to get all sorts and conditions of atmosphere for these tests. I have found that on a stormy day, on a train like the Burlington No. 1, averaging about fifty miles an hour and running against the rain, it is impossible to keep the head outside of the cab and you can not see through the window. The engineer just dodges his head out and quickly back. Acuteness of vision (for one can not see much) is thus not so essential as quickness of perception; and this faculty lies not wholly in the eyes, as we know, but is largely a mental quality. I have found that when I reduce my vision to 20/40 there are no ordinary signals which an engineer can not see within stopping distances of these trains. There is in this test, however, a peculiar difference between day and night signals. One sees the night signals relatively better than the day signals. This is due to the fact that when one has 20/20 vision or better, the emergent rays of the signal lamps produce some dazzling effects; and these may lead to confusion where the lights are numerous. With 20/40 vision these rays are not perceived. The lights are seen as bright discs.

I have found also that by wearing glasses I could keep my head out of the cab in stormy weather when the engineer, without them, could not. It does not therefore seem such a bad thing for an engineer to wear glasses. But if an engineer can wear glasses for one thing, why not for another? Neither the engineers nor the public will discriminate between causes for wearing them. To allow one trainman to do a thing which another in the same service may not, because the one has been on duty twenty years and the other only ten, does not make easy sailing with the trainmen. To have two different standards of vision for these two classes will not, in the event of an accident while the low standard man is in charge, make easy sailing with the public. If we want the coöperation of the railroad officials in our movement to farther safeguard the transportation of person and property, we must formulate rules more universally applicable.

DR. C. H. WILLIAMS, Boston—I wish to ask Dr. Allport if he wishes the Association to take final action on the report of the Committee as it stands.

DR. ALLPORT—If the Section sees fit to endorse the report as it stands we should like to have it brought before the Association as a whole for adoption, but the latter part can not be carried out at this year's meeting.

DR. WILLIAMS—I wanted to make that point clear before going on because it seems to me the report is not yet quite definite enough for us to recommend it to the Association. It seems to me that in order to get practical railroad men to listen to our recommendations we must do two things; we must separate, as has been recommended both by Dr. Wuerdemann and Dr. Allport, the requirement for men coming into the service from those required of old employes. We all agree upon the question of men coming into the service, but the difficulties come in dealing with the old employes and that difficulty is greater to-day than it will be a few years hence because by insisting upon a high standard for men coming into the service we will not have so many of these troublesome questions arising later on. Now, I am inclined to go a great deal further than the report of this Committee in what may be considered as the minimum limit of safety in old employes. Two and a half years ago I drew up for the New York, New Haven & Hartford Railroad some standards for the examination and re-examination of their men; these were put into operation for eighteen months on half of their system, then modified somewhat and extended to the whole system. These standards require that old employes be re-examined every three years and before promotion. The whispered voice is a most uncertain test for hearing and if you exclude the man who can not hear a voice at more than 15 feet I think it will not be entirely fair. I think you want both the voice test and one other, either the watch, or what I prefer, the ratchet acumeter. Another great difficulty with the report as presented is that it does not give in detail the method to be followed in making the examinations. For instance, in regard to color tests, I have had four men who passed the test with the Holmgren worsteds and the Thomson stick and yet when they looked at the lantern they mixed up the reds and greens in more than half the number of exposures! We must have something in addition to the worsted tests.

DR. H. V. WUERDEMANN, Milwaukee—I understand the Committee advises that all new men should have practically normal vision, that is, 20/20. Now, how many prospective railroad men have that amount? We threw down about 5 per cent. on account of color blindness, but is there not a much larger percentage who have more or less defective vision and who would yet be safe men to perform all the work required of a railroad employe? The question with the railroads is not

Do you require perfect vision, color sense and hearing in new employes? And what concessions do you permit from a perfect standard in the case of old employes?	How long must a man work for your road before you call him an old employe?	Do you permit old employes to wear glasses when on duty?
Not at this time. We are preparing a set of blanks for physical as well as eye and ear examination.	Do not classify them	Yes.
All employes rated same; accept judgment of surgeon as to latitude of requirements.	No fixed period here; when the road was a narrow guage.	No.
Require not less than 20/30 in either eye, and not less than 20/25 in both eyes.	Over 6 years	Engineers, no; conductors, for reading. Distant vision must be good.
New employes, 20/20 each eye; old employes, 20/20 one eye and 20/30 other eye.	When promoted from fireman to engineer or brakeman to conductor.	Not on main line.
Perfect vision, color sense and hearing in new employes. Old employes granted a few concessions consistent with safety.	. . . . .	No.
Do not require perfect vision, color sense or hearing, but they must not be below the standard; old employes are allowed to wear glasses to correct defects in vision, eyes to be examined and glasses fitted by a designated oculist.	Five years	Yes, under conditions above mentioned.
New employes, yes; old employes as per pamphlet.	There is no class of "old employes."	Yes.
We do not	One year	Yes.

altogether what they should have but what they can get. I understand that in the West where there are many men seeking employment the railroads have considerable difficulty to get good men. I think the plan suggested by Dr. Williams is better, and would be adopted by the railroads quicker. As to whether we should demand good working vision in both eyes, I should say yes, by all means. A man with monocular vision is quite as good for most trades, but suppose an engineer with one bad eye gets a cinder in his good one. He is thrown out of place at once. Suppose such an accident should happen to both engineer and fireman at one time (and this is possible if not probable) it might bring about a serious predicament. As to the wearing of glasses on the train I think that only protective glasses should be used.

DR. WILLIAMS—Dr. Wuerdemann may not have understood me. In my experience there is no difficulty in securing new men for the railroad service in the East with 20/20 vision without glasses. I was speaking only of old employes.

DR. FRANK R. ALLPORT, Chicago—This discussion, with its variety of individual opinions, exemplifies some of the difficulties under which your Committee has labored. The various members of the Committee live in different portions of the country, and it has been impossible, of course, to get them together. Those of the Committee who are at this meeting, met yesterday. For about a year, by means of frequent and numerous correspondence between the different members of the Committee, and by concessions and alterations on the part of all, we have finally unanimously agreed on this report as presented to you and feel that it is as good a one as can be produced at the present time. We realize its imperfections, and that alterations in its views will necessarily be made from time to time. But as this matter has been now held in abeyance for about three years, we feel that action should now be taken and the matter be placed in a position where it can progress. The Committee desires free discussion upon the subject, and is perfectly willing that alterations should be made in accordance with the desires of the Section, or if the Section feels that another Committee can do better work, I am sure we would all be glad to be relieved from the task. I do not agree with Dr. Wuerdemann in regard to the lack of railroad employes possessing perfect physical qualifications. I am told by railroad officials that there is plenty of good material, and I therefore feel that when a man for the first time presents himself to the railroad for work of a responsible character, that the road has a perfect right to demand practically perfect physical development. We have made provision for modifying these requirements as men grow old in the service of the road, but we earnestly recommend practically perfect eyes and ears when men first enter service, when the railroad is under no obligations to them. Some one has suggested that employes be allowed to wear glasses, and speaks of protecting glasses particularly. I presume no railroad would object to the wearing of mica glasses for protection, but after a careful consideration of the problem, your Committee believes that men engaged on a locomotive engine, and carrying precious lives and valuable property behind them, should not be allowed to wear glasses for the improvement of distant vision. Dr. Williams, at the Atlantic City meeting, presented some regulations he had prepared for the New York, New Haven & Hartford Railroad and again makes reference to them at this meeting. He says that they test vision with both eyes open with no reference to the individual vision of each separate eye. This certainly seems a dangerous rule, for as I argued at Atlantic City, a man might be totally blind in one eye, under which circumstances it hardly seems that he should be allowed to retain as responsible a position as the running of a train. The Doctor also objects to the whispered voice as a test for hearing, and recommends an instrument which he has devised for this purpose. I believe the consensus of professional opinion is less and less in favor of the watch for the testing of hearing. In the German clinics such mechanisms have been almost entirely abandoned and the voice substituted, which appears to be the safest and most direct test we can adopt. Some member has objected to the question of finance being mentioned at all in these resolutions. The only reference to the matter is in one section where it is stated that the expense of a primary examination should be borne by the applicant. This certainly seems just, for at this stage of a man's career the road is under no obligations to him. If he desires to enter the service, there is no reason why he should not stand the expense of a clean bill of health, and it was felt that if the railroads were not burdened by a preliminary eye and ear examination by an eye and ear surgeon, that they would be more ready to comply with these suggestions.

Upon motion of Dr. Jackson, seconded by Dr. Risley, the report of the Committee was adopted, and the Committee discharged. The new Chairman of the Section was instructed to appoint a Committee to present the matter before the general session of the American Medical Association at its next meeting.

Public Prophylaxis of Venereal Diseases.—F. P. Guiard publishes an article in the December *Annales de Dermatologie et de Syph.*, which proclaims that a great advance would be made in the prevention of venereal diseases if prostitutes could be made to realize the possibility of protecting themselves against contagion by appropriate local antiseptic measures applied no later than five minutes. They should be thoroughly instructed in the dangers that threaten them from venereal diseases and also in the simple technique of prophylactic antisepsis. After extensive study of the best measures for the purpose, he recommends a 1 per 5000 solution of sublimate, from a fountain syringe, retained intermittently in the vagina by compression of the labia. All the recesses in the external genitalia should be rubbed with the same solution. This protects against syphilis and soft chancre as well as gonorrhea.

THE PROBLEM OF HEREDITY.

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The individual who comes into the world is, as Luys[1] remarks, not an isolated being separated from his kindred. He is one link in a long chain which is unrolled by time, and of which the first links are lost in the past. He is bound to those who follow him and to the atavic influence which he possesses; he serves for their temporary resting place, and he transmits them to his descendants. If he come from a race well endowed and well formed, he possesses the characteristics of organization which his ancestors have given him. He is ready for the combat of life and to pursue his way by his own virtues and energies. But inversely, if he spring from a stock which is already marked with an hereditary blemish and in which the development of the nervous system is incomplete, he comes into existence with a badly balanced organization, and his natural defects existing as germs and in a measure latent are ready to be developed when some accidental cause arises to start them into activity.

As Moreau (de Tours)[2] nearly half a century ago pointed out, an incorrect conception of heredity looks for identical phenomena in each succeeding generation. This view arises from the biologically unjustifiable belief, entirely too prevalent, that the human being is simply a product of two individuals and this product is perfectly formed from the start. To this view is due alike the credulity of those who claim absolute direct heredity of acquirements and the skepticism of those who absolutely deny these. In addition to immediate heredity three forces have to be recognized: immediate atavism, remote atavism and finally fetal environment and postnatal environment during growth. The embryo as a whole advances through a regulated system of atrophies and hypertrophies. If the immediate ancestry be weak or the maternal environment during fetal life be poor, the atavistic tendency of the remote type will gain at the expense of physiologic advance unless parried by the favorable influence of immediate atavism.

In essence no distinction can be drawn between pathologic or physiologic results in heredity. The only distinction is as to whether the hereditary acquirement, whether pathologic or physiologic, be anomalous or usual, in the species, race or family.

Transformation, metaplasia, change from one species into another, whether in man, animals or plants, or tissues, can not, as Virchow[3] remarked seven years ago, take place without anomaly; for if no anomaly appear this new departure is impossible. The physiologic norm hitherto subsisting is changed, and this change can not well be called anything but an anomaly. In former days an anomaly was called pathos and in this sense every departure from the norm is a pathologic event. If such pathologic event be ascertained, this forces investigation as to what pathos was the special cause of it. This cause may be, for example, an external force or a chemical substance or a physical agent producing in the normal condition of the body a change, an anomaly (pathos). This can become hereditary under some circumstances and then may be a foundation for slight hereditary characteristics propagated in a family. In themselves these belong to pathology, even though they produce no injury. Pathologic does not mean harmful, nor does it indicate disease. Disease in Greek is *nosos* and it is nosology that is concerned with disease. The pathologic under some circumstances may be of advantage to its inheritor.

Whether certain defects shall prove malign or benign to the organism is determined by environment, whether intra-uterine, during the nursing period, or later. All vertebrate embryos at their origin are the same. They pass through many common types before being differentiated. Supernumerary organs exist in these common types at one phase of embryonic life. For these reasons repetition of teratologic types occurs in vertebrates. The higher vertebrate embryo contains in essence the organs and potentialities of all lower vertebrates. Under the influence of heredity or accidental defect, an organ, structure or function constant in a species may be lacking or excessive in an individual without remote atavism being involved. Varying conditions stimulate these embryonic potentialities at the expense of the later acquired and more typic human organs. Thus results a struggle for existence between organs and structures, early observed by Aristotle, Goethe and St. Hilaire, but fully demonstrated by Roux[4] two decades ago. He, while admitting determination by heredity, shows that surrounding forces are necessary, not simply the condition of activity by an essential element of the final product.

The introduction of variations depends on the fact of reproduction. It is usually assumed that sex differentiation is a *sine qua non* for reproduction. Sex differentiation does not exist in many of the higher invertebrates and parthenogenesis or virgin generation occurs in abortive form even among the vertebrates.[5] Even in mammals, not excepting man, the unimpregnated ovum is capable of imperfect development. The function of the male in heredity is, therefore, overestimated. The male among many invertebrates merely so adds nutriment to the developing ovum as to enable the embryo to pass through higher development than would otherwise be possible. As Jacques Loeb has shown, normal salt solutions may here be substituted for male fluids.[6] In certain invertebrates osmosis of similar fluids from the male occurs. The female function in reproduction is, hence, the most potent. The potency of the female in this particular increases with rise in the scale of life. Among viviparous mammals the product of conception remains under uterine control for a lengthy period and is nourished by the mother long after birth. Upon the mother, therefore, depends to a large extent the preservation of the race type and of any accidental variations introduced by the male.

In a general way there is an antagonism between the individual so far as personal existence is concerned and between the tendency to reproduction. It is from this antagonism that Weismann[7] has drawn the biologic difference between the body plasm which constitutes the individual and the germ plasm which reproduces the race. There are, hence, in every being two factors which vary in inverse ratio: The impulse of every individual to self-preservation and the impulse to the production of other individuals. The former diminishes when the latter augments. These two forces are necessarily antagonistic. In evolution of the compound organism, cells and structures have surrendered reproductive powers for the benefit of the whole organism. Local degenerations have, hence, occurred for general benefit.[8] Since certain parts in the evolution of organs disappear, and in the evolution of organisms certain organs through suppressive economy,[9] and since the disappearing and developing tendency of necessity centers around the time when certain functions are to be lost by the disappearing, and others

gained by the developing, periods of stress occur around which the law of economy of growth centers the struggle for existence between parts of organs and between organs themselves. It is because of this that physiologic atrophies and hypertrophies occur. Since the ovum when impregnated does not enter into a full course of development at once, and since the power of the embryo to pass through the different stages depends, as even Weismann admits, on its nutrition, the power of the embryo to pass through these different stages of stress will turn in part on its initial velocity from both parents. Heredity is shown in more or less complete development rather than in any specific quality.

Immediate atavism may be malign or benign as circumstances determine. In any event it tends to secure the race type as opposed to variation, whether in the direction of advance or degeneracy. Indeed, it may secure by certain degeneracies advance as opposed to remote atavism. If, at certain periods of intra-uterine stress through deficient nutrition, remote atavism gains the day, cerebral states result analogous to those of animals so far as the encephalic basis is concerned. The neuron passes successively through stages corresponding to those which are to be found in the adult fish, frog, bird and mammal. In this case development consists in an increasing complexity of the cell with no formation of unnecessary rudimentary parts. Its ontogeny in man usually repeats in modified form the main ancestral stages. This is peculiarly evident when the cerebral development of man is compared with that of the vertebrate series.

In fish and batrachia (ichthyopsidæ) the cerebral hemispheres do not cover the region of the third ventricle from which the eyes arise (thalamencephalon); in the human embryo of the seventh week, same. In reptiles and birds (sauropsidæ) the hemispheres cover the thalmencephalon, but leave uncovered the region of the optic lobes (mesencephalon); in the human embryo of the middle of the third month, same. In mammals the hemispheres cover the thalamencephalon (cerebellum and medulla) and the olfactory lobes; in the human embryo of the fifth month, same. In some mammals even of higher orders (*e. g.*, some hapalidæ) the hemispheres are smooth; in the human embryo of the middle of the fifth month, same.

Arrested development of the neurons would imply imperfect power of association and consequently imperfect potentialities for education. As the power of passing through the fetal period of stress depends on the condition in which the fetal organism is at the time of the period of stress, and as this condition of the fetal organism depends partly on factors inherited and partly on the maternal condition, defect in either at these periods of stress may so disarrange the struggle for existence between the fetal organs that reversionary conditions succeed.

Through degeneracy of certain inferior organs superior organs may draw to themselves under the law of economy of growth sufficient nutriment to obtain the ascendancy. The inferior organs may subsequently regain their power while the gain made by the superior organs is retained.[10]

Because of this struggle for existence between the different factors of heredity and because of a varying environment at the periods of stress, whether intra- or extra-uterine, hereditary acquirements are rarely able to overcome remote or immediate atavism so as to pass through the periods of stress. Weismann's criticism, therefore, while valid against absolutely direct heredity, does not hold against conditions affecting the organism as a whole. As Virchow has already pointed out demarcation between physiologic, abnormal and pathologic is a varying matter of degree, not kind. The opposite view vitiates the current conceptions of heredity of acquired characteristics. Stress has been laid on the distinction between the normal and abnormal as a reason for the non-inheritance of defect. Certain strongly opposed observations Weismann attempted to explain away by an exceedingly crude baseless theory. According to him, inherited epilepsy is due not to cerebral malformation, disorder or disease, but to infection by microbes. As the ovum can carry more microbes than the spermatozoön, epilepsy more frequently comes from the mother than the father. The grossly absurd baselessness of this theory needs no demonstration. It fails completely to explain the facts and to exclude every other explanation. Predisposition, according to Weismann, may occur in the children of the tuberculous; this is due not to inherited weakness but to some mysterious non-specific action.

Weismann claimed absolute distinction between the germ plasm and the body of plasm. This claim, which never explained reproduction by budding or reproduction of lost limbs in salamanders,[7] has been completely destroyed by late observations at the Naples Aquarium. These have emphatically demonstrated that no absolute distinction so far as reproduction is concerned exists between germ plasm and body plasm. The distinction between the germ plasm and body plasm theory of Weismann[11] and the pangenesis theory of Darwin is therefore of degree and not kind. Conditions occur in which cells regain the function of reproduction surrendered for the benefit of an organ or an organism. Weismann practically destroys the absoluteness of his claim by admitting that more or less considerable abnormalities may affect the course of development and either cause the death of the embryo or produce more or less marked deformities.[12]

From the interaction of remote atavism, immediate atavism, immediate heredity and maternal environment during pregnancy results transformation of heredity. An incorrect conception of heredity—as Moreau (de Tours) remarked nearly a half a century ago—"looks for identical phenomena in each succeeding generation. Some have refused to admit that mental faculties were subject to heredity because the mental characters of the descendants were not precisely those of the progenitors. Each generation must copy the preceding. Father and son must present the spectacle of one being, having two births, and each time leading the same life, under the same conditions. But it is not in heredity of functions or of organic or intellectual facts that the application of the law of heredity must be sought, but at the very fountain head of the organism, in its inmost constitution. A family whose head is insane or epileptic does not of necessity consist of lunatics or epileptics, but the children may be idiotic, paralytic, or scrofulous. What the father transmits to the children is not insanity, but a vicious constitution which will manifest itself under various forms in epilepsy, hysteria, scrofula, rickets, etc. This is what is to be understood by hereditary transmission." Physicians who deal with heredity often mar their results by limiting them to its direct effect.[13] Moreau indicated the line along which heredity should be studied when he divided the conditions due to hereditary defects into the following categories:[2] 1, absence of

conception; 2, retardation of conception; 3, imperfect conception; 4, monstrosities; 5, products, whose mental, moral, and physical constitution is imperfect; 6, products specially exposed to nervous disorders in order of frequency as follows: epilepsy, imbecility or idiocy, deaf-mutism, insanity, cerebral paralysis, and other cerebral disorders; 7, lymphatic products predisposed to tuberculosis and allied disorders; 8, products which die in infancy in a greater proportion than sound infants under the same condition; 9, products which, although they escape stress of infancy, are less adapted than others to resist disease and death.

For reasons already assigned the mother is the great factor in heredity. Genius seldom leaves posterity because it attracts hysterics and neuropaths as lighthouse lanterns do birds. Paternal heredity is a prophecy of what may be not a destiny. A healthy mother may offset the paternal defects of generation. Maternal environment involves the much mooted question of maternal impressions. The average reported photographic maternal impressions will not stand the scientific requirement that a given hypothesis to be accepted must not only explain all the facts but must exclude every other explanation. It has been claimed that maternal impressions do not occur among the lower animals. This, however, is offset by authenticated cases. Thus, there are still preserved in the British Museum specimens of "newly-hatched chicks with a curved beak like a parrot and the toe set back as in that bird. The hens in the yard where these monstrosities were hatched had been frightened by a parrot which, having escaped, fluttered among them before the eggs were laid, and greatly frightened the hens from whose eggs the malformed chicks are hatched." This case seems to support the photographic theory of maternal impressions. The fact is, however, these malformations are simple arrests of development. Birds are aberrant reptiles. During the egg period of development the chick passes through a reptilian phase. At the close of this period it begins to assume the more strictly avian characters. Arrest of development at the reptilian phase would produce the malformations described.[6] Just after impregnation a sow—in a case reported by T. C. Poole[15] of Mansfield, Texas—was scared by an elephant. One of the resultant pigs was elephantine in shape and proboscis. The pig's snout passed through an embryonic proboscis phase; this was, therefore, also an arrest of development.

These cases, however, demonstrate that mental shock may strongly assist remote atavism and produce arrest of development. The human fetus reacts very decidedly to sensory impressions on the mother. Women often in the midst of ordinary dreams producing but very moderate excitation, not generally interrupting sleep, are awakened by fetal movements. The dreams had nothing of the nightmare influence of a terrifying idea. They were merely the ordinary phenomena of sleep. Mental changes of the mother hence excite motor reaction in the fetus, and as with sensorial excitation these reactions are stronger in the fetus than in the mother. These motor reactions, as Féré points out, are obviously due to unconscious involuntary movement of the muscular walls of the womb.[16]

That maternal shock can exert an influence on the fetus there can be, therefore, no doubt. The question, however, as to the fact of this influence, its method of action, and its results, must be determined by an analysis of the period of pregnancy at which the shock is charged and the result. Profound shock, destitution, and want of food act on the mother and may influence the fetus deleteriously. Hence the significance of the fact that 92 children born in Paris during the siege of 1870-71, 64 had slight mental or physical anomalies; the remaining 28 were all weakly; 21 were weak-minded; and 8 were subjects of moral imbecility. In Berlin the financial crisis of 1875-80 was followed by an increase in the number of idiots born. Not only do poverty and want produce anemia and malnutrition of the fetus, but profound shock disturbs the whole bodily metabolism. The nutrition of the mother may thereby be so disturbed as to result in a partial toxemia, which tends to disturb development of the fetus *in utero*. Thus a nexus of cause and effect can be traced. This influence is further borne out by the results of Dareste and E. C. Spitzka[17] in producing teratologic malformation. By wounding the embryonic and vascular areas of the chick's germ with a cataract needle, malformations are induced varying in intensity and character with the earliness of the injury and its precise extent. More delicate injuries produce less monstrous development. Partial varnishing or irregular heating of the egg-shell results in anomalies comparable to microcephaly and cerebral asymmetry. This latter fact (showing the constancy of the injurious effect of so apparently slight an impression as the partial varnishing of a structure not connected with the embryo at all directly) suggests the line of research to be followed in determining the source of the maternal and other impressions acting on the germ. What delicate problems are to be solved in this connection may be inferred from the fact that eggs transported in railroad cars, and subjected to the vibration and repeated shocks of a railroad journey, are checked in development for several days. A more delicate molecular transmission during the maturation of the ovum, during its fertilization, or finally during embryonic stages of the more complex and therefore more readily disturbed and distorted human germ, accounts for the disastrous effect of insanity, emotion, or other mental or physical shock of the parent on the offspring. The cause of the majority of cerebral deformities exists in the germ prior to the appearance of the separate organs of the body. Artificial deformities produce analogous results because they imitate original germ defects, either by mechanical removal or by some other interference with a special part of the germ. Early involvement of the germ is shown in the fact that somatic malformations in the hereditary psychoses often effect the body elsewhere than the nervous axis. The stigmata of heredity—defective development of the uro-genital system, deformities in the face, skull, irregular growth of the teeth, misshapen ears and limbs—owe their grave significance to this fact. Like deformities of the brain, these anomalies are also more marked and constant with the lower forms of the hereditarily based systematized perversions of the mind than the higher. It is easy from these results to understand how far and how the nervous system has its part in the disorders of general development. The individuals who present most deformities are equally those who suffer from most decided disorders of the nervous system.

In dealing with alleged defect from paternal heredity the influence of the father upon maternal environment must be taken into account. Epileptic children may result from the effect paternal inebriety has upon maternal health and environment. In cases of Calmuck idiocy charged to paternal drunkenness, healthy children

have been born despite the drunkenness until the mother has been broken down.[18] Drunkenness of the father at the time of impregnation may produce defectives through the resultant shock to the mother.

While the direct inheritance of minor defects is rare, its rarity is much overestimated. Prepuce absence among Jews is so frequent that a special volume of Rabbinical lore[19] deals with the controversies over the ritual to be used in case a child is born without a prepuce. The infrequency of such cases among non-circumcising races needs no demonstration. Ritual circumcision occurs during the formative stage of sexual development. The allegation of the abscence of inherited effects from ritual circumcision is sheer assumption, repeated for decades without attempts at demonstration. The religious literature on the subject alone demonstrates this since theologians do not meet a ritual difficulty until it arises.[20] Tests of the malignity or benignity of heredity are often very erroneous. A large family is assumed to be decided evidence against degeneracy. It is often a transformation of malign heredity. As Herbert Spencer has shown, with increase in growth and specialization, decrease in the explosive manifestations of life must occur. Among these explosive manifestations in early biologic history is the function of reproduction which is common to all cells. With advance in evolution the functions of cells become specialized and the extent of reproductive power is decreased. This specialization Spencer designates individuation. In degeneracy the organism returns to the lower type and consequently tends to a reversion of individuation. From this results the plural and frequently repeated births in the phthisical and the degenerate. Valenta had under observation two epileptics (mother and daughter) who illustrated very decidedly the biologic stigma to which reference has just been made. The mother had thirty-eight children—six times twins, four times triplets, and twice quadruplets. The daughter at the age of 40 had had thirty-two children; three times twins, six times triplets, and twice quadruplets. Ninety families of degenerates coming under my own observation averaged eleven children each. Triplets, quadruplets, and twins were more than ten times as frequent as among the population taken as a whole. The occurrence of large families is not an expression of advance but of degeneracy. The teachings which have been entirely too prevalent as to the status in evolution being determined by progeny have cultivated what must be regarded merely as one transformation of malign heredity. Another biologic stigma of degeneracy on which considerable stress is laid as an evidence of health is the occurrence of one instance of old age in a family of short-lived people. In biology of degenerates such instances are remarkably frequent. In this instance, while there is an expression of healthy atavism, there is also an expression of degeneracy which, predisposing the organism to yield to slight causes of disease, thereby prevents it from being deeply affected by them. On the other hand the absence of any deep emotional feeling enables such an organism to ride through worry like a cork through an ocean storm, and thereby to survive.

It is obvious that the problem of heredity has been approached from the standpoint of preconceived notions. The forces underlying it have been estimated entirely from the standpoints of times when embryology and biology were unknown. Furthermore, certain forces have been regarded as malign or benign *per se* when circumstances made them so. The tests of malignity or benignity have also been based on preconceived notions. Decrease or increase of births has been estimated entirely from a fallacious view-point.

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NOTE ON GAUGING VESICAL CAPACITY.

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The determination of the capacity of the bladder is often a very important point in the study and treatment of vesical disease. While the amount of urine that the bladder will retain without serious discomfort is by no means an infallible criterion of the extent of vesico-parietal pathologic alterations, it is nevertheless often of positive value from that standpoint. As indicative of the progress of certain cases under treatment it is often invaluable. As indicating the relative degree of impairment of elasticity of the bladder walls and the presence, degree and progress of pericystitis, the capacity of the bladder is one of the most important points for the consideration of the surgeon. The ordinary method of injecting the bladder hydrostatically—as with the fountain syringe or glass irrigating apparatus, with or without catheter or tube—is open to serious impeachment on the grounds of inaccuracy. The reasons for this inaccuracy I will venture to present.

1. In case the catheter or tube is used, the urinary *besoin* is excited by the presence of the tube in the deep urethra, vesical neck and cavity. Under these circumstances it is impossible to determine whether an imperative desire to urinate as the bladder is filled, is due to extreme physiologic distension, or to reflex excitation of vesical contraction through irritation of the seat of urinary desire by the catheter, which acts simply as might any foreign body.

2. When a large catheter is used, unless the hydrostatic pressure is too low to overcome the true sphincter and distend the bladder at all, the water rushes into the bladder so rapidly that the bladder is literally "surprised" into a reflex resentment of the inflowing fluid, and its capacity is transiently so diminished thereby that it is often less than half the normal capacity for urine. A bladder which will tolerate the presence of 8 or 10 ounces of urine under ordinary conditions often resents the pressure of 4 to 6 ounces of sterilized water by the irrigating method. When the urine trickles into the bladder *guttatim*, or enters *per saltum* from the ureters, the bladder is distended very gradually, and a relatively large amount of urine will be tolerated without discomfort. Half the same quantity of fluid thrown into the bladder rapidly will often necessitate immedi-

ate evacuation of the viscus. It would seem that bland and neutral urine should be better tolerated than the average acid normal urine, but I have made some very interesting observations on this point. In persons who are ingesting large quantities of pure spring water, which passes through the renal mechanism very rapidly, the bladder capacity is often immediately markedly decreased. This is due to the extreme rapidity with which the urine enters the bladder even though it be *per vias naturales*. I have noted this phenomenon so often that I feel sure of my ground. Irritable bladders can be, and often are, injuriously overworked in this way. When the hydrostatic method is employed without tube or catheter, the amount of force necessary to overcome sphincteric resistance foreordains a relatively powerful, bulky and swiftly-running current. This awakens bladder resentment both from stimulation of the urinary *besoin*, and surprising the bladder muscle, and speedy evacuation becomes necessary. This explains why so few accidents happen from hydrostatic expansion of the bladder. The bladder contracts and expels the fluid before hyperdistension occurs. This protective reflex is, however, not to be trusted too far. Its reliability presupposes a fairly sound and fairly elastic bladder wall. Caution is therefore necessary in aged subjects, whether the bladder is known to be extensively diseased or not.

There is no routine method for measuring bladder capacity which is applicable to all cases. Symptomatically, cases may be divided into those in which the abnormal calls to urinate are worse at night, and second, those in which the greatest frequency is during the waking hours. In the first class of cases the symptom-producing condition is almost entirely organic. In such cases the environment of daytime life is more or less distracting, and the calls to urinate are not so frequent as at night. In the second class there is a greater or less degreee of neuropathic disturbance, existing either as a complication of actual organic disease and subordinate to it, or constituting—as it often does—the overshadowing element of the case. It is often difficult to draw the differential diagnostic lines, it is true; yet the cases in which it can be done are by no means infrequent. In cases with a decided neuropathic bias, the patient is unduly concerned about his bladder symptoms, and as a result of auto-suggestion the frequence of urinary desire is increased. Few realize how important the neuropathic side of urinary disturbances often is. A physician of my acquaintance who is the unfortunate possessor of an irritable bladder, tells me that his condition is almost unbearable when he happens to have in hand cases in which the disturbance of micturition is a strong factor.

Even in cases in which the condition is obviously organic there may be a neuropathic element, as a consequence of which micturition is most frequent in the daytime. In general, however, increased diurnal frequency means conditions in which movement and gravity enhance the local irritation. This is often found in *prostatiques*, vesical tumor and calculus. In general, frequent micturition due chiefly to inflammatory conditions is improved by rest, nocturnal or diurnal.

In cases of a purely nervous type, or in which the nervous element is a serious factor for consideration—cases distinguished clinically by lessened frequency of micturition at night—and in certain organic conditions in which rest is productive of similar improvement in symptoms, the capacity of the bladder can be gauged by a method at once simple and efficient, a method which does not err by proving only the capacity of the bladder while in hyperdistension. The patient should be instructed to drink moderately of pure water during the evening, and, when aroused at night by a desire to micturate, to pass water on each occasion in a separate vessel. The greatest quantity obtained at any given micturition represents the maximum capacity of the bladder from a clinical standpoint. Cases in which the frequency of urination is aggravated at night, can not be gauged in this way, and mechanical means must necessarily be employed. The chief source of error here is: 1, hyperesthesia of the prostatic urethra and consequent exaltation of the urinary *besoin;* 2, too rapid distension of the bladder, producing "surprise" and peremptory muscular reflex in the bladder wall.

These sources of error being understood, the practical deductions are at once obvious. In the first place, general reflex excitability, if marked, should be guarded against by sedatives and antispasmodics. A hypodermic of morphia, 20 to 30 minutes before gauging the bladder capacity, is very useful. The local reflex irritability may be done away with by applications of eucain or cocain to the prostatic urethra. A small catheter should be used, save in the exceptional instances in which sphincteric resistance is easily overcome and the hydrostatic method without catheter can be used under relatively low pressure. Sterile water or normal salt solution is best for distending the bladder. Antiseptic solutions, as a rule, are too irritating, and defeat the very purpose for which they are used.

Whenever, in gauging bladder capacity, the urine returns at first with some degree of force, but loses this force as the test proceeds, it may be safely assumed that temporary distension atony has been produced and the operation, so far as gauging vesical capacity at that particular *séance* is concerned, is a failure, and the test will require repetition.

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PRIMARY SARCOMA OF THE ESOPHAGUS AND STOMACH.*

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PRIMARY SARCOMA OF THE ESOPHAGUS.

The fact that there are only eleven cases recorded in the literature shows that this affection is rare. Most of the cases have been regarded as pathological curiosities and were reported by the following authors: Chapman, 1877; Targett, 1889; Stephan, 1890; Shaw, 1891; Rolleston, 1893; Albrecht, 1895; Ogle, 1896; Livingood, 1898; Gastpar, 1900, and Stark, 2 cases, 1900. Besides these, Perry and Shaw, in an article on malignant tumors of the stomach, allude to two cases of sarcoma of the esophagus without, however, giving either clinical or pathologic data.

To the previously reported cases I am able to add another, that of a smooth muscle cell sarcoma of the lower end of the esophagus. The history is as follows: S. B., aged 51, was admitted to the Cleveland City Hospital service of Dr. Hoover, August, 1900, complaining of vomiting and difficulty in swallowing. He died a few weeks later of exhaustion.

* Read at the Fifty-second Annual Meeting of the American Medical Association in the Section on Pathology and Bacteriology, and approved for publication by the Executive Committee: Drs. A. Stengel, W. S. Hall and L. Hektoen.

Clinical Diagnosis: Carcinoma of the esophagus. Autopsy by Dr. Moore, resident pathologist.

Anatomical Diagnosis: Sarcoma of lower end of the esophagus, with metastasis in the cardiac end of the stomach, slight chronic interstitial nephritis, brown atrophy of the heart, emphysema and pigmentation of the lungs with broncho-pneumonia.

The body was 157 cm. long and markedly emaciated. The surface of the body was free from scars, abrasions and new growths. The superficial lymph glands were not enlarged. As the esophagus and stomach are the only organs showing lesions of present interest, the description of the other organs is omitted.

Esophagus: The organ is of normal size and appearance from its beginning to within 12 cm. of its cardiac end. At this point its wall is much thickened, and its mucous surface is the seat of irregular ulcers, covered with grayish necrotic material. The surface is irregular, but there are no polypoid masses projecting into the lumen. On section the wall is rather thicker than usual, firm and dense in consistency, and pale in color. The cardiac orifice of the stomach is narrowed, but admits the little finger with ease.

Stomach: The stomach is of ordinary size and appears normal throughout, except for the thickening of the cardiac orifice above described and for the presence near the latter of a nodular tumor, 7 cm. in its greatest diameter. On section this mass is seen to be beneath the mucosa. It is dense and firm and on section is glistening in appearance. Some of the lymph glands near the stomach are enlarged. There are no other metastases.

Microscopic Examination of Esophagus and Stomach: Sections made at various points through the wall of the esophagus, including the tumor, show in general the same appearances. The mucosa is fairly well preserved between the points of ulceration. In some places it is necrotic and contains numbers of bacilli, some of which are large and stout. In other places the mucosa is entirely replaced by a mass of fungoid tissue. It is composed of a fairly vascular fibrous tissue containing a number of larger and smaller areas of large spindle-shaped, large and small round, and many giant cells, which are supported by a variable amount of intercellular substance. There is no distinct alveolar structure, but a semblance of this occurs when masses of these cells occupy dilated vessels. The cells are often seen infiltrating the denser fibrous tissue. The nuclei of the tumor cells are large and vary much in shape, but are usually oval; they are often elongated, and even fusiform. They are usually vesicular and many of them contain fine chromatin granules. Some nuclei are dense and stain diffusely and deeply with hemotoxylin and methylene blue. Some swollen nuclei contain small nucleoli. Nuclear figures are very numerous. The sarcomatous tissue is not diffuse, but, especially at the borders of the growth, occurs in patches. When, as is often the case, they occupy dilated lymph or blood vessels, the cells are usually large and often round, but even here long fusiform cells with long swollen vesicular nuclei are seen. In a few places the cells are arranged in concentric layers, and the cells of the inner layers are flattened and often show hyaline degeneration. The growth is best marked in the muscularis, all the coats of which are involved. (At the seat of the tumor only smooth muscle tissue is to be found.) In this tissue the most characteristic appearances of the growth are found. It consists of larger and smaller areas composed largely of long spindle-shaped cells with long swollen oval or fusiform nuclei. The cells and nuclei are often very large. The cells lie in parallel rows, usually separated by a small amount of intercellular tissue, which is, however, often absent or invisible. There is a striking resemblance between these cells and their nuclei and the muscle cells and nuclei of the neighboring tissue. The tumor cells nearest the muscle tissue very closely resemble those of the latter. They are narrower and have long oval or fusiform rather deeply staining nuclei. In most places it is easy to trace all gradations between the large tumor cells and the narrow muscle cells with thin deeply staining nuclei. The stages in the development of the muscle cells into tumor cells is as follows: Along the advancing border of the growth the nuclei of some of the muscle cells swell and become more vesicular; later the nuclei become more swollen and develop fine chromatin growths. At the same time the cell body becomes thicker and its ends become somewhat rounded, and finally develops into a modified fusiform or even oval shape. Such cells can be found among unchanged muscle cells at quite a distance from the new growth. They are not infrequently found in isolated groups. In the sarcomatous tissue there are a number of large round cells with oval or round vesicular nuclei containing fine chromatin granules. Sections stained with Weigert's elastic tissue stain show little if any newly formed elastic tissue. As far as can be seen the fibrous tissue of the submucosa and of the muscularis plays no part in the tumor formation. Many of the larger sarcomatous areas show marked necrosis, with nuclear fragmentation. In the tumor tissue and at its border there are numerous polymorphonuclear eosinophiles. This tumor, then, is a mixed cell sarcoma apparently divided solely from the smooth muscle tissue of the esophagus.

Sections of the wall of the stomach made through the nodule show atrophy and superficial necrosis of the mucosa, which is entirely lost in places. In other places it is infiltrated with small round cells. The submucosa is in general free, but here and there shows the same round cell infiltration. The muscularis is the seat of an extensive invasion of a new growth in every way similar to that described in the esophagus. In most places the tumor cells are situated in dilated vessels. In some places the tumor tissue infiltrates the muscularis and a number of areas are to be seen in which the muscle cells take part in the tumor growth and show the same changes noted in the esophagus. In many of the muscle cells near the new growth there are large vacuoles.

Sections of the enlarged lymph glands show a new growth similar to that of the esophagus and stomach. There is, however, marked necrosis.

Revised Diagnosis: Primary myosarcoma of the esophagus, with metastases in the stomach and neighboring lymphatic glands.

Until Livingood's paper, in 1898, sarcoma of the esophagus was regarded as a pathologic curiosity and, on account of its rarity, of no special clinical importance. Livingood analyzed the cases reported to the date of his article and added a well-studied case with a full clinical history. He concludes that there is clinically no essential difference between sarcoma and carcinoma of the esophagus. He further notes that the advance of sarcomatous tumors of the esophagus is more rapid than carcinoma, being fatal within nine months from the first symptoms; that widespread metastases and the location of metastases are as uncommon and indefinite as in carcinoma, and finally, that the mode of termination is the same in both. Livingood found eleven cases of carcinoma and one case of sarcoma of the esophagus in one thousand consecutive autopsies. He suggests that the apparent rarity of sarcoma is due to a lack of careful histological study of esophageal tumors.

Stark, in the most recent and complete article on esophageal sarcoma, reports two cases and analyzes the clinical symptoms of the affection. In regard to the differential diagnosis between sarcoma and carcinoma of the esophagus, he states that age has little influence if the case of Stephan (a 4-year-old child) is excepted, but that in an individual under 25 years of age sarcoma is much more probable than carcinoma. He thinks that the most important symptom is pain, which in carcinoma may be lacking for months, and when it does occur is rarely of the intense stabbing character observed in sarcoma; the pain in carcinoma is usually most marked after eating, and in sarcoma while fasting, especially at night. He further states that the pain in sarcoma is

back between the shoulder blades, which is uncommon in carcinoma. He also points out that the duration of the disease is shorter in sarcoma; in one of his cases death occurred in ten weeks after the first symptoms of dyspepsia.

A critical study of the twelve recorded cases (including my case) of sarcoma of the esophagus brings out the following information:

Age.—Youngest, 4 years (lympho-sarcoma, Stephan); 25 years, one case; 38 years, one case; 41 years, one case, 45 years, one case; 50 to 55 years, five cases, and 60 to 70 years, two cases. (The cases of Perry and Shaw are mentioned without clinical or pathological data and are, therefore, useless for generalization.)

Situation of the Tumor.—Lower part of the esophagus, 9 cases; upper part, 2 cases; not mentioned in 1 case.

Morphology of the Tumors.—Pedunculated or polypoid in 3 cases (Ogle, Albrecht and Stephan); diffuse tumor formation with polypoid or nodular excresences in 2 cases (Livingood and Gastpar); tumor mass completely surrounding the lumen in 5 cases (Rolleston, Gastpar, Stark—2 cases—and Howard); not mentioned in 3 cases. More or less obstruction occurred in nearly all cases; in some stenosis was complete. Ulceration of the mucosa and of the growths occurred in 7 cases. Perforation of the esophagus occurred in 4 cases; into the trachea twice. (Shaw and Livingood); and with pleurisy and lung inflammation twice (Rolleston and Stark).

Histologic Characters of the Tumors.—Lympho-sarcoma, 1 case (Stephan); round cell sarcoma, 4 cases (Shaw, Stark, Stark, Rolleston); pure spindle cell, 2 cases (Ogle and Livingood); oval and spindle cell, 2 cases (Chapman and Targett); alveolar, 1 case (Albrecht). Large mixed cell, 1 case (Gastpar); muscle cell, 1 case (Howard).

Metastases were noted in 5 cases; in the neighboring lymph glands, stomach, intestines, kidneys, adrenals, lungs, liver, brain, etc., in 1 case (Stark); in the peripancreatic lymph glands, the iliac bone and neighboring muscles, the temporal bone and muscle, 1 case (Rolleston); in the neighboring lymph glands and kidneys, 1 case (Shaw); in the stomach and gastro-hepatic lymph glands, 1 case (Howard); and in the liver, 1 case (Stark).

In one of Stark's cases the stomach contents were acid in reaction, without, however, the presence of free HCl.

In 4 cases, no clinical diagnosis was made; in 3 cases it was carcinoma, in 3 esophageal tumor; in one case periostitis of the spinal vertebræ with extension to the esophagus, with perigastritis; in 1 case there were no clinical symptoms referable to the esophagus. In this case—Albrecht's—the patient died of croupous pneumonia and at autopsy a pedunculated alveolar sarcoma was found in the esophagus.

Conclusions.—Analysis of the twelve recorded cases of sarcoma of the esophagus shows the following: 1. The disease is more common in males than in females, and at the period of life during which carcinoma most frequently occurs. It may, however, unlike carcinoma, occur in early life—between 4 and 25 years. 2. Nine of the twelve cases involved the lower half of the organ. 3. While the tumors usually nearly surround the lumen, in three cases they formed pedunculated or polypoid masses projecting into the lumen. 4. Symptoms of esophageal obstruction occurred in eleven of twelve cases. 5. There was perforation with involvement of the respiratory organs in four cases. 6. All the varieties of sarcoma except angio-sarcoma have been found, the round cell variety standing first in frequency—one-fourth of the cases. 7. Metastases occur rather frequently (five out of twelve cases), and in two cases were widespread. 8. The clinical diagnosis of esophageal sarcoma has not been made and there are no certain and constant diagnostic points between sarcoma and carcinoma of this organ, the clinical symptoms being necessarily very much the same and dependent upon the same conditions—obstruction and cachexia—in the two diseases. 9. As pointed out by both Livingood and Stark, sarcoma runs a more rapid course, and a fatal issue is to be looked for earlier than in carcinoma. The greater size of the sarcomatous growths is probably responsible for this. 10. The differences in the character, distribution, and period, of the pain in the two affections described by Stark, are not mentioned by other observers. It would prove a matter of considerable importance if his experience is confirmed.

PRIMARY SARCOMA OF THE STOMACH.

A case of sarcoma of the stomach was recognized and reported as early as 1847 by Bruch, and Virchow described three cases in 1865. Although a considerable nnmber of cases were reported chiefly as pathologic curiosities, it was not until the classical article of Schlesinger, in 1897, that the subject assumed clinical importance. This author reported three personally observed cases and collected 33 others from the literature. In 1898 Brooks reported a case and analyzed 15 others which he collected from the literature. In the past six years several cases have been reported by surgeons—Hartley, Baldy, Capello, Cantwell and others—who have removed gastric sarcomata at operation. The best of the recent articles on gastric sarcoma is that of Dock, in 1900, who reported a carefully studied case, and collected 13 additional cases from the literature, which, added to the cases collected by Schlesinger, brought the total number of known cases up to 50.

In a careful search of the literature I have been able to add 7 cases to these, which, together with the 4 cases reported in this article, increase the total number of cases to 61. I have taken considerable pains to criticise the accuracy of the diagnosis in the cases collected from the literature and have excluded all those in which there was any apparent doubt in regard to the correctness of the diagnosis of sarcoma. As several of the reported cases have been found by accident in articles under other titles, I am led to believe that this list does not include all the recorded cases. All who write on the subject must acknowledge a debt to Krüger, Schlesinger and Dock. The disease is ignored in most of the textbooks on diagnosis, diseases of the stomach and pathology.

CASE 1.—Diffuse round cell sarcoma with atrophy and constriction of the stomach.

Female, aged 65 years, a patient of Dr. J. H. Lowman, to whom I am indebted for the clinical history, complained of nausea and vomiting for over a year before her death, which occurred Jan. 12, 1896. She was weak and emaciated, but was able to walk about the room three days before her death. No mass could be palpated in the abdomen.

Clinical Diagnosis: Carcinoma of the stomach.

Autopsy: The body was that of a woman of ordinary size, and was poorly nourished. The abdomen was distended. The skin showed no scars, abrasions or new growths. The pericardium, heart, aorta and large vessels showed no abnormalities. The esophagus was normal.

Stomach: The stomach occupied its usual position. It was very small, being about one-fourth its ordinary size. On external examination it was everywhere hard, firm and inelastic. Midway between the cardia and pelvis the organ was markedly constricted, roughly resembling an hour-glass in shape. On section its wall was everywhere greatly thickened, being from 1 to 3 or 4 cm. in thickness. At the point of constriction the lumen was 3 cm. in diameter. The mucosa, which was of a brownish-red color, was unbroken. The thickening of the stomach wall was due to the presence of a dense and firm grayish-white tissue, which had a rather homogeneous

appearance. This tissue apparently did not encroach upon the mucosa, but involved the submucosa and muscularis, both of which coats were extensively infiltrated. The gastro-hepatic, mesenteric and retro-peritoneal lymph glands were enlarged and had the same appearance as the growth in the wall of the stomach.

The other organs showed nothing of present interest.

Sections of the stomach made of various portions showed in some places disintegration of the mucosa. In some places it had entirely disappeared. In all the sections examined, the submucosa was transformed into a fibro-cellular tissue composed of newly-formed fibrous tissue containing variable numbers of small round and oval cells. The cells showed no special arrangement, but often occurred in groups and masses and were always supported by fibrous tissue or by a fibrillar intercellular substance. The individual cells varied from 8 to 15 mikron in diameter. They had a single round or oval nucleus which usually stained deeply and uniformly with hematoxylin. Some cells had paler nuclei. The cell bodies were usually round or slightly oval. A few spindle-shaped cells were seen. In all sections the muscularis was markedly invaded, in many places diffusely. All grades of invasion of this coat occurred from small islands of tumor cells to complete transformation into tumor tissue. The muscle tissue was pushed aside and infiltrated by the new growth. There was no evidence of proliferation of the muscle cells, which, so far as could be determined, played no part in the tumor formation. The origin of the tumor from the fibrous tissue of the submucosa was clear. A few blood vessels were found in the new growth. In no places was invasion of blood vessels made out. The amount of fibrous tissue present in some parts of the tumor warrants the term fibro-sarcoma. Sections of the lymph glands showed a growth in all respects similar to that of the stomach.

Anatomic Diagnosis: Small round and oval cell sarcoma of the stomach, primary in the submucosa, and infiltrating the muscularis. Constriction producing hour-glass shape of the stomach. Secondary sarcomatosis of the gastro-hepatic mesenteric and retro-peritoneal lymph glands. Anemia.

CASE 2.—Mixed cell sarcoma of the stomach with abscess formation in the tumor, with metastases in the neighboring lymph glands.

R. F., female, aged 46 years, was admitted to the Lakeside Hospital, Sept. 7, 1898, service of Dr. Dudley P. Allen (Dr. Nevison acting), complaining of anorexia, headache, pain, swelling in the region of the spleen. There was no vomiting and no pain in the epigastric region. A large mass could be felt in the region of the spleen. Examination was otherwise negative. The urine contained a trace of albumin but no casts. The red blood cells were normal in number and appearance. A considerable leucocytosis was noted.

Clinical Diagnosis: Tumor of the spleen. The patient died 12 days after admission. Autopsy a few hours after death.

Anatomic Diagnosis: Primary mixed cell sarcoma of the stomach with abscess formation and peritonitis. No metastases. Edema and congestion of the lungs. Adenoma of the duodenum. Streptococcus pyogenes and staphylococcus pyogenes aureus, and a short liquefying bacillus in the peritoneal exudate and abscess of the tumor of the stomach.

The body was 172 cm. long. The general nutrition was good. There were no scars, wounds or growths upon the surface of the body. There was bilateral enlargement of the thyroid. The chest was well shaped, the pleuræ negative; the lungs showed congestion, edema and emphysema, but were free from tumors. The pericardium, heart and aorta are without present interest. The abdomen was distended and very tympanitic. The abdominal wall contained a thick layer of fat; the muscles were pale. The parietal peritoneum was covered with a thin fibrino-purulent exudation. The coils of the intestine were bound together by recent fibrous adhesions, containing larger and smaller collections of creamy pus. The liver projected 4 cm. below the costal border in the mammary line. The under surface was adherent to the stomach, and the colon. The stomach was intimately bound to the surrounding structures, and was displaced downwards towards the left, so that its posterior surface lay over the left kidney. Its anterior wall was of ordinary size and appearance. The posterior wall was thickened. On the right side there was a ragged opening, 8x4 cm., between the peritoneal cavity and with a large cystic area in the posterior wall of the stomach.

Stomach: On removal and section the stomach contained foul-smelling yellowish material. The cubic capacity of the organ was reduced, while its bulk was markedly increased. The anterior wall was normal in appearance. Near the lesser curvature, and affecting nearly the whole of the posterior wall, there was a tumor mass 20x16 cm. which varied from 0.5 to 8 cm. in thickness. Near the lesser curvature there was a fungus-like mass, 6x8 cm. in breadth and length, which protruded into the lumen of the stomach. This protuberance was irregular in outline and ulcerated, and covered with a foul-smelling yellowish pus. The tumor did not extend to or involve the pylorus, which was quite soft. The tumor lay beneath the mucosa everywhere except at the ulcerated area. At the cardiac end of the tumor there was a cyst 7x4 cm., and at the pyloric end a similar cyst 6x5 cm.; between these there was a larger cyst, communicating with the other two. These cysts contained fluid and necrotic material. The larger cyst communicated with the peritoneal cavity. The tumor varied very much in thickness, the cyst walls being from 1 to 3 cm. thick. The tumor involved the submucosa and invaded the muscularis and mucosa irregularly. On section it varied much in consistency, in some places it was soft, while in others it was dense and firm. On the right side of the stomach near the tail of the pancreas, there was a nodular mass, apparently an enlarged lymph gland, measuring 8x4 cm., which on section had the same appearance as the growth in the stomach, and contained a cyst 3x2 cm. in size. The neighboring lymph glands were swollen. The posterior wall of the stomach was bound to the pancreas, which was not, however, invaded by the tumor. The duodenum was markedly congested; 8 cm. below the pylorus there was a small nodule, 1.5 cm. in diameter, situated in the submucosa. The rest of the intestines showed nothing abnormal., The other organs showed nothing of present interest.

Sections of the stomach made at a distance from the tumor showed nothing abnormal. Sections from various portions of the tumor all showed much the same structure, the tissue being composed of rather large round, oval and spindle-shaped cells of the connective-tissue type, and with relatively large nuclei. The cells were not arranged in alveoli, but a supporting connective-tissue could be made out. In some places, especially at the borders, the tumor was fibro-cellular, while in others it was markedly cellular in structure. Larger and smaller areas of necrosis were found. Sections taken from the margins of the cysts showed marked necrosis, with nuclear fragmentation. In this material there were large and small clumps of large bacilli. In a few places there was an intimate relation between the tumor cells and the adventitia of arteries and veins, suggestive of the vascular origin of the former. These areas were always isolated. In other places, at a considerable distance from the main tumor, there were small irregular islands of typical sarcoma tissue and apparently springing from the connective tissue of the submucosa. The tumor was situated in the submucosa and invaded the muscularis and the mucosa in only a few places. Its origin was without doubt in the submucosa. Sections of the smaller tumor showed the same structure met with in the larger. No trace of lymphatic tissue, however, remained. There was markedly little inflammatory reaction about and in the tumors of the stomach; no groups of tumor cells were found in either blood or lymph vessels. Some of the veins, however, contained recent thrombi.

Sections of the small tumor situated in the submucosa of the duodenum showed a typical adenoma, composed of a large number of glands divided into lobules by connective tissue bands. The glands were lined with a single row of epithelial cells, which were columnar in some and cuboidal in other glands. The cytoplasm of these cells was finely granular and stained poorly; the nuclei were vesicular and placed at the base of the cells, where the latter were supported by a delicate membrana

propria. The epithelial cells formed a single row in the glands and never broke through the membrana propria. No ducts were to be found. The tumor lay almost entirely in the submucosa, but in some places had pushed through the muscularis mucosæ and encroached upon the mucosa, which was normal in appearance. Sections of the tumor of the thyroid showed a papillary adenoma. The other organs are without present interest.

CASE 3.—Sarcoma of the pylorus. G. H., white, a laborer, aged 48 years, was admitted to St. Alexis' Hospital, service of Dr. Cogan, Oct. 26, 1900, complaining of vomiting and weakness. His family history was negative. The patient stated that he had always enjoyed good health until December, 1899, when his appetite failed and he began to lose weight. In October, 1900, he had to give up work on account of weakness and discomfort in his stomach. At this time he began to vomit after each meal. After admission to the hospital he vomited almost continuously until his death, which occurred on November 3. No food could be retained by the stomach.

Examination of the chest was negative. No tumor could be felt in the abdomen. On testing the stomach contents the acidity was normal. Motility and absorption were both diminished. The red blood cells numbered 1,000,000 per cubic millimeter. The leucocytes were not increased.

Anatomic Diagnosis: Sarcoma of the pylorus and neighboring portion of the stomach. Broncho-pneumonia of both lungs. Chronic adhesive pleuritis. Anemia.

The body was poorly nourished. Rigor mortis was present. The other organs showed nothing of present interest; only the description of the stomach is taken from the autopsy protocol.

Stomach: This was somewhat dilated. On opening the organ the pylorus and the wall of the stomach on all sides for a distance of 10 cm. from the pylorus, were found to be thickened. The mucosa was unbroken. The gastric wall at the pylorus measured from 1 to 2 cm. in thickness. The tumor on section was at nearly every point beneath the mucosa, and its chief seat was the submucosa, but in many places it could be traced into the muscularis. The tumor was homogeneous in appearance and firm in consistency. The lymph glands in the neighborhood of the stomach were not enlarged. No metastases were found in any organ.

In sections made from various portions of the tumor the mucosa was atrophied, the tubules having been compressed and the interglandular stroma replaced by fibrous tissue containing, round, oval or fusiform cells. The muscularis mucosæ was absent in many places. The submucosa was everywhere thickened, due to a new growth of fibrous tissue, containing a varying number of fusiform, round and oval cells, supported by a variable amount of intercellular substance. At many places this tissue extended into the muscularis. In some places the sarcomatous tissue was markedly fibrous. Throughout the tumor the capillaries were numerous. In many places the lymph vessels were dilated and contained tumor cells. In some places the endothelial cells of the lymphatics showed marked proliferation and nearly filled the lumina of these vessels. In some lymphatics the lining cells had assumed a cuboidal shape and the structure had the appearance of a tubular gland. The new growth in some places invaded the nerves and even the serosa. There was no peritonitis.

CASE 4.—A saloonkeeper, aged 39 years, married and a moderate drinker, suffered with occasional attacks of indigestion and discomfort in the epigastrium for a year before consulting Dr. Robert H. Sunkle, to whose kindness I am indebted for the history and autopsy in this case. When first seen by Dr. Sunkle, the man complained of pain in the abdomen, loss of weight, strength and appetite. The liver was greatly and uniformly enlarged, but no nodules were palpated. No tumor could be made out in connection with the stomach. The heart and lungs were negative. There was occasional vomiting, but no special pain referable to the stomach.

A few days before death, which occurred one month after Dr. Sunkle first saw the case, dulness was made out in the flanks. Dr. Sunkle's diagnosis was hypertrophic cirrhosis of the liver, in which he was upheld by Dr. Sihler, who saw the case in consultation. Later the possibility of carcinoma of the liver was considered.

The autopsy was made by Dr. Sunkle, who brought the organs to my laboratory for examination.

Anatomic Diagnosis: Primary angio-sarcoma of the lesser curvature of the stomach, with metastases in the neighboring lymph glands and in the liver.

As the stomach and liver were the only organs showing changes of present interest, a description of the other organs is omitted.

Stomach: The organ was of ordinary size. The lesser curvature was thickened. On section, the cardiac and pyloric ends were normal, as were the greater curvature and the anterior and posterior walls. The mucosa was somewhat thickened. The whole length of the lesser curvature was thickened and from it a mass of tissue protruded into the cavity of the organ. The mass was from 1.5 to 2 cm. in thickness and 4x5 cm. in outline. The surface was irregularly ulcerated and it was difficult to make out the mucosa. On section the mucosa was soft, readily lacked the pearly translucency of carcinoma. The growth extended through the coats of the stomach, and included and surrounded several enlarged lymph glands, which were virtually involved in the growth. On section these glands were soft and had the same appearance as the gastric tumor. The peritoneal cavity contained a considerable amount of clear fluid. There was no peritonitis. The liver was markedly enlarged, its edges rounded, the capsule mottled red and yellow. Scattered over the surface, but lying well beneath the capsule, there were a number of soft yellowish areas. On section both the right and left lobes of the organ were the seat of numerous grayish-yellow areas of soft consistency, sharply marked off from the surrounding liver tissue, and varying from 0.5 to 3 or 4 cm. in diameter. Many of the large branches of the portal vein were occluded by grayish-yellow masses, which were here and there mixed with blood and coagula. Portal vessels could be traced into many of the larger masses, which often contained central hemorrhagic areas. The liver tissue between the masses was congested and in places compressed. The external surface of the gall bladder showed a small nodule similar to those found in the liver. The gall bladder and bile ducts on section were normal. The mesenteric glands and other organs were free from metastases.

Histologic Examination: Stomach. In sections of the gastric wall made at a distance from the tumor, there was disintegration of the superficial layer of the mucosa. In sections cut through the tumor at various places the mucosa showed disintegration to a varying depth. In some sections the deeper layers of the mucosa were invaded by tumor tissue which compressed and replaced the tubules and interglandular tissue. The submucosa was markedly thickened, due to the presence of large areas of tumor tissue which was diffuse in some places and in others sharply circumscribed. This latter appearance was usually due to the extension of tumor tissue into large and small veins. The tumor evidently had its origin in the submucosa and varied in structure considerably. In many places the structure was typical of a mixed cell sarcoma, being composed of large and small round and oval cells, large spindle-shaped and numerous giant cells, and a variable amount of intercellular tissue, which was conspicuous in some places and scanty in others. In general, the tumor was very cellular. In all parts of the growth, capillaries, most of which contained blood, were numerous. In most places the relation of the tumor cells to the capillaries was intimate, viz., masses of round, oval, flattened and often fusiform cells surrounded blood capillaries, and were placed directly in relation with their walls. In some places, especially in the metastases in the liver, tumor cells were arranged in a regular row about a small lumen, in such a manner as to resemble a cross-section of a tubule. Blood cells and granular material were present in some of these spaces. In still other places the tumor cells were arranged in large alveoli, supported by a variable amount of intercellular tissue and capillaries. The muscularis was only slightly invaded, and the mucosa was markedly invaded in places. The invasion of the large and small veins of the sub-

mucosa was marked. Most of these vessels in the tumor area were completely occluded by tumor tissue, similar to that above described. The tumor cells varied much in size and shape. Their nuclei were large, round or oval, some staining densely, while in others fine chromatin masses could be made out. In many nuclei there was a rather large oval or round hyaline body, which stained pink with eosin. Nuclear figures were common. The giant cells had very large single nuclei. Many of the tumor cells showed marked fatty degeneration. The growths in the lymph glands and the liver were identical with that of the stomach. The relation of the tumor cells to the capillaries was especially well marked in the liver metastases. Some of the branches of the portal vein contained both tumor cells and fibrinous thrombi. Many were completely occluded. In many places the new growth in the liver had passed through the veins and was infiltrating the liver tissue. In sections some distance from metastases, there was marked necrosis of the central portions of the liver lobules with hemorrhage. There could be no doubt in regard to the sarcomatous nature of the neoplasm, which evidently sprung from the blood vessels of the submucosa of the stomach.

Frequency.—The disease is certainly rare, but probably occurs more commonly than is generally supposed. There can be no doubt but that in the absence of routine microscopic examination of tumors found at operation and autopsy, many cases must have been mistaken for carcinoma, which, indeed, was the clinical diagnosis in a considerable number of the recorded cases. So far there are sixty-one known cases. Next to carcinoma it is certainly the most common tumor of the stomach.

Etiology.—Of the 61 cases 30 occurred in females, 25 in males and in 6 the sex was not mentioned. In regard to age the youngest reported case occurred in a girl 3½ years old (Findlayson's lympho-sarcoma). The age was reported in 52 cases and the ages were as follows: It was from 15 to 20 years in 6 cases; 20 to 30 in 9 cases; 30 to 40 in 7 cases; 40 to 50 in 10 cases; 50 to 60 in 10 cases; 60 to 70 in 5 cases; 78 in 2 cases, and given as "old age" in 2 cases. Nothing is known of the primary cause of the disease. In Brooks' case the tumor started in an old bullet wound of the stomach.

Seats of Tumors.—Heretofore on account of the meager data at hand little attempt has been made to establish the principal seats of sarcoma of the stomach. Schlesinger and Dock concluded that any portion of the gastric wall might be affected. The former states that the greater curvature is the most common seat, especially of the nodular form, while lympho-sarcomata are apt to be diffuse. Dock calls attention to their origin at the pylorus and in the posterior wall in some of the recently reported cases.

Analysis of the 61 cases shows that the growth was diffuse in 13, of which 4 were lympho, 5 round cell, 1 fibro and 1 spindle-cell sarcoma. In 8 cases the growth was limited to the pylorus, in 6 cases the pylorus and the lower half of the stomach were involved, in 1 the pylorus and the upper part of the duodenum, and in 1 the pylorus and the greater curvature; the pylorus was involved in a total of 16 cases. The tumors were primary in the greater curvature in 7 cases, and involved the greater curvature with the posterior wall in 1 case, with the lesser curvature and posterior wall in 2 cases, and with the anterior wall in 1 case, making the total involvement of the greater curvature 11 cases. The lesser curvature alone was involved in 5 cases, with the cardia in 3 cases, with the posterior wall in 1 case and with the posterior wall and greater curvature in 1 case. The posterior wall alone was affected in 6 cases, and with the anterior wall in 1 case. The cardia was involved in only 3 cases, and always with the lesser curvature. The anterior wall was never involved alone, but was affected with the posterior wall in 1 case, and the greater curvature in another.

It is seen from the above that the growth involved the pyloric end in a total of 16 cases, the cardiac end in 3 cases, the intermediate portions in 27, while it was said to be diffuse in 13 cases. The seat of the growth was not mentioned in 5 cases. The stomach and whole gastro-intestinal track were involved in 1 case of lympho-sarcoma.

Pyloric stenosis was noted in only 5 cases, but probably occurred more frequently, for the reports are meager in many instances.

Size of Tumors.—They were stated to have been the size of a pigeon's egg in 1 case, a man's fist in 2 cases, an orange in 1 case, a child's head in 5 cases, and a man's head in 6 cases. The tumors extended below the umbilicus in 8 cases.

General Appearances.—They were said to have been nodular in 27 instances, and in some of these, notably in 2 cases, the tumors formed polypoid masses projecting into the lumen of the stomach. Tumors projected into the peritoneal cavity in 8 cases. In some of the latter cases the base of the tumor was narrow. The new growths showed ulceration in 10 cases, with perforation of the gastric wall in 2 cases.

In many instances, the exact number of which could not be determined, the growth developed beneath the mucosa, which was intact. The growth usually started in the submucosa, and the muscularis was commonly involved. The tumors occasionally had their origin in the muscularis, and cases of myosarcoma was recorded.

The tumors varied much in consistency, from soft, spongy, fungoid masses to firm, fibrous growths, and had the general macroscopic characters of sarcoma of other organs. They differed from carcinoma in their situation, being usually beneath the mucosa and often not involving the latter, and also in their nodular character, comparative dryness and homogeneous appearance on section. In many cases the diagnosis was not made until microscopic examination. This was, no doubt, often due to lack of care in the macroscopic examination. Cystic degeneration of the tumors occurred in 6 cases, hyaline degeneration in 1, calcification in 3, myxomatous degeneration in 2, and suppuration in 1. The stomach is stated to have been decreased in size in 2 cases, and in 1 case, the second reported in this paper, it was constricted in the middle and resembled an hour glass in shape. In a few cases, dilatation of the stomach is mentioned, but this seems to be much less common and not so marked as in carcinoma. It will be noted that the pyloric end of the stomach was involved in only 16 out of 61 cases—26.23 per cent.—and that pyloric stenosis was noted in only 5 cases—8.19 per cent. The stomach was bound to the right lobe of the liver in one case and the spleen in another.

Involvement of Other Glands.—Metastases occurred in 24 cases—40 per cent.—a smaller proportion than in carcinoma. The gastro-hepatic lymph glands were involved alone in 2 and with other organs in 5 cases; the mesenteric glands in 6 cases, never alone; the retroperitoneal glands alone in 1 case and with other organs in another. The omentum was invaded in 2 cases, the liver in only 7 cases, the spleen in 4, the kidneys in 2, the ovaries in 3, the peritoneum in 2, and the intestines, pancreas, thyroid, right adrenal, and testis each in 1 case. In our Case 4 there was extensive sarcomatous

embolism of the branches of the portal vein, with multiple large metatases of the liver.

Histologic Classification.—The growths were classified as round cell in 16 cases, spindle cell in 8, mixed cell in 4, as lympho-sarcoma in 15, myosarcoma in 4, fibro-sarcoma in 3, angio-sarcoma in 3, and endothelial (lymph) sarcoma in 1. The histologic diagnosis was not given in 7 cases. In Case 4 of our series giant cells were numerous.

Clinical Symptoms.—Reigel states that there is no clinical difference between sarcoma and carcinoma of the stomach, and that hematemesis and cachexia are common to both. Schlesinger found that examination of the stomach contents (7 cases reported by Hammerslog, Maass, Dreger, Fleiner and Schlesinger) showed nothing essentially different from that of gastric carcinoma. Dock, who has presented the most carefully studied case, made a diagnosis of dilatation from a tumor at the pylorus, probably the scar of an old ulcer, but also thought of carcinoma and sarcoma, "but the features of the case were not considered to admit a differential diagnosis."

According to Reigel the clinical course runs from a few months to three years, on an average of from 1 to 1½ years. In several cases death occurred within from four to six months from the onset of nausea and vomiting and epigastric pain. Many cases run their course without symptoms until near the end. Case 4 illustrates this point. In some cases there were no clinical symptoms referable to the stomach. In Hartley's case there was coffee-ground vomit and dyspepsia five years before the case came under observation. There was no recurrence and except for symptoms of indigestion, fair health was enjoyed for four years, when coffee-like material was vomited on five successive mornings.

Analysis of the cases shows that the duration of the illness was mentioned in only 16 cases as follows: Six weeks, 1 case; 3 months, 1 case; 5 months, 1 case; 7 months, 1 case; 9 months, 1 case; 1 year, 4 cases; 2 years, 1 case; 3 years, 1 case; several years, 1 case; 5 years, 1 case. Vomiting was recorded in 18 cases, in 4 of which the vomitus was bloody. Loss of appetite was recorded in 5 cases, but was probably a common symptom. Diarrhea was a marked symptom in 2 cases, but constipation seems to have been of frequent occurrence. Pain in the gastric region was complained of in 6 cases; pain in the abdomen was noted in 9 cases, in 3 of which it dated for 2 years.

Tumors were palpated in the gastric region in 10 cases, in the splenic region in 6, and in the lower abdomen in 13 cases. In Case 4 the liver was enormously enlarged with no symptoms suggestive of disease of the stomach. Emaciation was noted in 13 cases.

The condition was mistaken for pseudo-leukemia in 1 case, and for pernicious anemia in 1 case; ascites occurred once and jaundice twice. Dock found that the blood in the cases of gastric sarcoma previously reported showed a decrease in the hemoglobin and in the number of red blood cells, and usually leucocytosis.

Diagnosis.—A diagnosis was either not made or not mentioned in 38 cases. In 5 cases a diagnosis of gastric carcinoma is recorded; in 8 cases the diagnosis was "malignant tumor" of the stomach, while a positive diagnosis of sarcoma of the stomach was made in 3 cases, one each by Schlesinger, Reigel and Westphalen. In the latter's case the diagnosis was made on the microscopic appearances of a bit of tissue obtained on washing the stomach. In Reigel's case a large sarcomatous nodule was vomited. A probable diagnosis of an old scar of the pylorus was made in one case by Dock. The diagnosis was tumor of the spleen, tumor of the omentum, tumor of the left hypochondrium, cystic tumor of the abdomen, ovarian cyst and pseudo-leukemia, each in one case. In Case 4 the diagnosis was hypertrophic cirrhosis of the liver. Little mention is made of differential diagnosis in the literature, and Dock undoubtedly states the case correctly when he says, that so far as the earlier stages are concerned we have no specific symptoms of sarcoma of the stomach and even when a tumor is present (palpable) it can not be differentiated from cancer (carcinoma). As previously pointed out, analysis of the gastric contents has hitherto been of no aid in differential diagnosis between gastric sarcoma and carcinoma.

Analysis of the 61 cases at our disposal brings out several points which may be of assistance in a differential diagnosis between sarcoma and carcinoma after the presence of a gastric tumor is established. In the first place age has an important bearing. It was shown to be as follows: One case of lympho-sarcoma of the stomach occurred in a girl 3½ years old; 7 were below 20 years; 23, or 37.7 per cent., were below 40, and only one-third of the cases occurred between 40 and 60 years, the most common period for the occurrence of carcinoma of the stomach.

In 16 cases, or 26.23 per cent., the tumors were situated at the pyloric end, causing pyloric stenosis in only 5 cases. In but 3 cases was the cardia involved. In the other 41 cases the tumors were seated between the pylorus and cardia, without involving either. These facts are not, however, of as much assistance as they seem at first glance, for it is chiefly in the cases in which the ends of the organ are involved, that symptoms of gastric tumor occur. The growth was diffused over the surface of the organ in 13 cases. Accurate figures could not be obtained, but it is clear from reading the reports of the recorded cases that dilatation of the stomach is much less common in sarcoma than in carcinoma of the stomach. In several cases the stomach was decreased in size. Gastric sarcoma was mistaken for tumor of the spleen or splenic region in 3 cases, and this is very natural in a case of large tumor mass of the greater curvature without gastric symptoms; see our Case 2.

The size of the tumor is a point of considerable diagnostic importance. In 6 cases the tumor was the size of a man's and in 5 of a child's head; in 3 cases they weighed from 10 to 12 pounds, projecting into the peritoneal cavity in 8 cases, and below the umbilicus in 9 cases. One case was operated on for tumor of the omentum, and another for ovarian cyst.

Although many cases run a short course, in a few instances gastric symptoms extended over a period of from two to five years. As previously pointed out, many cases run their course without symptoms until near the end, and frequently there are no symptoms referable to the stomach. The appetite and the gastric functions may continue to the end.

Treatment.—It is of interest to know that eleven cases have been operated on, with four deaths. In one case, that of Mintz', the patient recovered from a gastro-enterostomy, but died later from the tumor. A portion of the tumor was excised in two cases—Baldy and Dreger. In one case pus was evacuated from a gastric sarcoma with a fatal termination. In six cases the tumors were removed. In Capello's case, a woman 54 years old, a large cystic sarcoma of the stomach, the size of a man's head, mistaken for an ovarian cyst, was successfully re-

moved. The patient was in good health two years later. In a woman 52 years of age, Cantwell found a spindle cell sarcoma weighing 12 pounds, growing from the posterior wall of the stomach over a surface of five inches square. The tumor was successfully removed, but a secondary growth was discovered six months later. A successful operation for the removal of sarcoma of the stomach is credited to Billroth. In Dock's case, a man of 55 years, Nancrede successfully removed about one-third the long axis of the stomach and 2 cm. of the duodenum for a lympho-sarcoma, measuring 6 by 4 cm. The patient was well and had gained thirty pounds two months later. Hartley's case was even more remarkable. A woman 54 years of age, five years before coming under observation, vomited coffee-ground-like material, but had no other symptoms. There was no recurrence, and for four years she was in fair health, except for symptoms of indigestion which did not interfere with work. A year before applying for treatment she vomited coffee-ground-like material for five successive mornings. Pain in the back was a marked symptom. On physical examination a large, hard, elastic tumor was felt in the left lumbar and umbilical regions. At operation a large pedunculated tumor was removed from the posterior wall of the stomach. Schapf resected the entire stomach, the seat of a large lympho-sarcoma, in a woman, who gained flesh and was apparently well one year after operation.

Conclusions.—1. Gastric sarcoma is more common than is generally supposed, at least 61 cases being recorded. Careful routine microscopic examination of all gastric tumors met with at autopsy and operation will probably show a marked increase in the occurrence of these tumors. 2. The two sexes are affected in about equal proportions, as against five males to four females for carcinoma; 37.7 per cent. of the cases occurred below the fortieth year, and 11.44 per cent. (7 cases) below the twentieth year. 3. The pyloric end was involved in only 26.23 per cent. of the cases, as against 60 per cent. for carcinoma (Welch), and caused stenosis in only 8.19 per cent. of the entire number of cases. Diffuse growths occurred in 21.31 per cent., while the cardia was involved in only 4.9 per cent. The posterior wall and greater curvature are commonly involved. 4. Gastric sarcoma may reach a large size, that of a child's or man's head, and may project as large masses into the lumen of the stomach or into the peritoneal cavity, extending below the umbilicus—13.1 per cent. Such tumors have been mistaken for tumors of the spleen, omentum and ovaries, and may be pedunculated and readily removed. 5. Gastric sarcomata commonly start in the submucosa or muscularis and are less apt to ulcerate and cause hemorrhage than carcinomata. 6. All the histologic varieties of sarcoma have been found in the stomach. 7. While most of the cases in which the duration of the illness was mentioned ran an acute course, the average duration of life is probably from nine to ten months, while in one case it was three and in another five years. 8. Metastasis is not as frequent as in carcinoma, but may be widespread. The liver was invaded in only seven cases—11.47 per cent.—in striking contrast to gastric carcinoma, which, according to Welch's statistics, invaded this organ in 30 per cent. of cases. 9. There are no distinctive clinical symptoms or physical signs of sarcoma of the stomach, but a positive diagnosis has been made in three cases from microscopic examination of material obtained from the stomach. 10. In cases of large tumors connected with the stomach, especially when they project to or below the umbilicus, a diagnosis of sarcoma of the stomach is warranted. A tumor of the stomach in an individual under 20 years of age is almost certainly sarcoma. In our series 37.7 per cent. of the cases were under 40, while in Osler's 150 cases of carcinoma of the stomach only 15.3 per cent. were under this age. 11. Operation should be as successful in sarcoma as in carcinoma of the stomach.

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The Fifth International Congress of Gynecology and Obstetrics.—This congress will convene at Rome, September 15 to 21, 1902. Professor Mangiagalli will preside over the section of gynecology and Professor Morisani over the obstetric section. The committee of organization is composed of Professors Pasquali, of Rome, Pestalozzi, of Florence, and La Torre, of Rome, treasurer. The fee is 25 francs.

The Organization of the Medical Profession.

V.

Why Organization Has Failed in the Past.

(Continued from page 325.)

There is no wonder, if we recognize this as the ideal, that attempts at organization have failed in the past. Except in a few states, the county societies, what few there are, exist, to all intents and purposes, as independent organizations, each standing alone, struggling along without encouragement in its efforts, without help when it becomes weak, dying out or lying dormant for months or years, to be revived and struggle along again and again without help!

The state societies, as a rule, are independent organizations devoted to scientific and social purposes, and neglecting and ignoring the broad functions pertaining to a body representing the profession of the whole state. A study of the conditions existing in various parts of our country shows that in those states in which there are but few county societies the state society is weak in the number of its members and in influence; that its growth has been retarded because those who were trying to build it up did not realize that its growth and permanency rested on the county, or district society. They have been putting up the superstructure without the base, and then wondered why it crumbled down as fast as it was put up, and why new members came in barely fast enough to fill the places of those who were dropped for non-payment of dues.

Mutual Dependence of State and County Societies.

That there is an interdependence between the state and county societies has not been recognized. While there can not be a strong influential and prosperous state society without the support of active county organizations, the corollary is still more evident: There can not be strong active county societies without the aid and stimulus of a state society to encourage the weak, aid the struggling, and help to settle the petty troubles and disputes that are bound to occur in some of them. Those who are so anxious to have county societies permanently established should realize that simply planting a seed does not insure a full-grown flower; that it is usually necessary to water it and protect it from weeds. Organizing societies and then leaving them to die or live is simply traveling in a circle, going on a fool's errand. This is a fact that can not be stated too emphatically or too often.

Mutual Dependence of National and State Societies.

While these comments refer to societies in the individual state, they apply also to the state societies as a whole. These have been acting independently of each other, without any attempt at mutual help or interstate coöperation, which is so necessary if many of the objects of organization are to be met—and all this because there has been no close relationship between these and the AMERICAN MEDICAL ASSOCIATION. While mutual help and coöperation among the local societies of a state depend on a state society, so mutual help and coöperation among the state societies depend on a central or national society, in which they may federate and through which they can work.

As a majority of the state societies are independent of, and not closely related to, the county societies in the state, so until now the AMERICAN MEDICAL ASSOCIATION has been independent of, and without direct relation to, most of the state societies. It has for years been made up of men coming together according to the will of each individual. Nominally, membership in it depends on membership in an affiliated society; but for a long time it has been impossible to guard this right, since there has been no direct connection between it and the so-called affiliated societies, no method of verifying membership; as a result there are possibly hundreds who are not eligible to the membership in the AMERICAN MEDICAL ASSOCIATION which they now enjoy. As organized, the national association was ideal in its plan, the intention of its founders being to encourage the building up of local and state societies. Its legislative body was a representative one, made up of delegates elected by the lower societies—the county, district and state. But the tremendous growth of population and consequent increase in number of physicians and medical societies, without any change in the organic law of the association, had resulted in the legislative branch becoming fortuitous, unrepresentative and unwieldly, as well as too much engrossed in scientific and social work to have time to transact the important business that is the function of a great national body.

So all the way through, from top to bottom, there has been no system. Each state has been acting independently of all the others and no co-ordinate work or mutual help among the states has been attempted. Local societies have been started here and there, some to exist for a few weeks, some for a few months, and a very few to continue on with an ebb and flow of activity depending on the personal element that dominated them. The transactions of the AMERICAN MEDICAL ASSOCIATION and of the state societies are loaded down with resolutions favoring organization of county societies, but resolutions accomplish nothing. Spasmodic efforts have been made, but like spasmodic efforts in other things, they have resulted in failure. There is little wonder then that we hear it said that it is impossible to organize our profession. Those who are continually giving vent to these pessimistic views tell us that it can not be done, because it never has been done; that it has been tried year after year, and that we are no nearer to-day than we were fifty-seven years ago when the AMERICAN MEDICAL ASSOCIATION was started; and this seems to be true. In fact, there are several states in which the profession was better organized fifteen or twenty years ago than it is to-day. This in spite of the fact that so very many appreciate the need of organization and have been working in various ways to effect it.

The failure in the past has not only been due to not having a plan or system, but also to not having applied business principles to what little was attempted. We shall never have an organized profession as a result of volunteer efforts. There has been an immense amount of self-sacrificing work done in various parts of our country by a few individuals, but there is a limit to such efforts, and that limit has always been reached before anything more than a good beginning has been made. We can not expect even physicians to sacrifice their time, money and energy for the good of others beyond a certain point. There will never be an organized profession unless money is spent in its accomplishment and business principles applied as is done in other organizations.

(To be continued.)

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PARATYPHOID.

From time to time cases are being reported in the literature which appear like typical typhoid from the clinical standpoint, but in which the blood serum does not develop the power of agglutination of typhoid bacilli. Observations of this kind heretofore have been reported as proving that too much reliance can not be placed upon the diagnostic value of the agglutinative reaction, especially when the result is negative. But as has been pointed out before in these columns, in patients with the clinical symptoms of typhoid fever bacteriological examination of the blood has resulted in a few instances in cultures of bacilli differing in essential respects from the bacillus of typhoid fever. Such cases have been described by Gwyn, Kurth, Schottmüller; and others have recorded more or less similar observations. In these cases the serum reaction was negative in the case of typical typhoid bacilli, but positive with the bacilli cultivated from the blood.

Meltzer[1] presents an interesting summary of this subject. It seems that the bacilli isolated belong to the colon-typhoid group, but do not coagulate milk, ferment lactose or form indol at the same time as they do produce gas, ferment glucose and produce alkali. They therefore resemble very much the group of organisms to which are classed the meat poisoning bacilli, the hog cholera bacillus, Shiga's bacillus of dysentery, etc.; perhaps the most typical and generally representative organism of this group is midway between the colon group and the typhoid group, Gärtner's bacillus enteriditis. From observations on the agglutinative powers of appropriate serums upon the anomalous bacilli from typhoid-like cases it has been shown that while they are no doubt distinct from B. enteriditis of Gärtner, yet they have close relationships between themselves.

So far all the patients who have been studied with the results above referred to have recovered. In addition to the general symptoms of typhoid intestinal hemorrhages, late osteomyelitic foci have been noted, but nothing is known of the pathological anatomy of the disease. It would indeed be very interesting to learn what the changes in the intestines may be in these cases, and also whether the same microscopic changes occur in the lymphadenoid tissue of the intestines, mesentery and spleen as in typical typhoid fever. Meltzer proposes the term paratyphoid as the most suitable name for the disease and paratyphoid bacilli as the most appropriate designation for the organisms. He argues with much plausibility, that the persistent absence of the serum reaction with typhoid bacilli in a supposed case of typhoid fever means that the disease is caused by a paratyphoid bacillus. In the Hamburg epidemic of typhoid fever investigated by Schottmüller (sixty-eight cases) six cases proved to be paratyphoid. In Bremen, Kurth found five paratyphoid cases in an epidemic of sixty-two cases of typhoid fever. Here are two typhoid epidemics yielding eight per cent. of paratyphoid. This would be rather a higher percentage than usual of negative serum reactions in typhoid fever when compared with statistics from hospitals and boards of health. Meltzer is inclined to believe, however, that in many cases of paratyphoid there may have been a mixed infection with typhoid bacilli sufficient to give rise, in the serum of the patient, to substances agglutinating typhoid bacilli, and such cases would be classed as typhoid fever. He supposes that the intestines may contain in the first place large numbers of virulent paratyphoid bacilli and a small number of typhoid bacilli of only moderate virulence; as the paratyphoid bacilli cause necrosis of the epithelium of the intestine and enter the circulation symptoms entirely like those of typhoid fever make their appearance. At the same time a small number of typhoid bacilli pass into the circulation and cause specific agglutinins so that the blood of the patient causes, let us say, a reaction in a dilution of one in twenty. Such a case would be diagnosed as typhoid fever. In reality, however, it would be an example of paratyphoid infection. If the blood, feces or urine of such patients were examined carefully bacteriologically, the paratyphoid organism might be isolated and the serum of the patient might be found to have much stronger agglutinating power upon this bacillus than upon the typhoid bacillus. Durham has done some interesting and suggestive work in this line. Meltzer suggests, therefore, that the blood of patients with supposed typhoid fever, but giving the serum reaction only in small dilutions or not at all, should be tested also with paratyphoid bacilli. In this way a clue to the nature of the disease might be obtained and this would also stimulate to careful bacteriological studies which should be made in all doubtful cases, and which finally would place the diagnosis upon an absolutely correct etiological basis.

These developments in the knowledge concerning the disease or group of diseases known as typhoid fever are attributable to the careful application to clinical medicine of the methods of the bacteriological laboratory. The results show that an etiological diagnosis, based upon strictly scientific methods, always comes nearer to the true nature of diseases than the ordinary diagnosis, which is based purely upon the clinical symptoms, ever can hope to do. But of what value is all this to the physician and to the patient? Perhaps of but little apparent, immediate practical value. To the general practitioner, Meltzer's summary indicates the direction

1. N. Y. Med. Monatschrift, January. N. Y. Med. Jour., 1902, January, 138-142. See also p. 425.

in which development is going; that the application of modern methods to the study of well-known diseases is about to separate distinct etiological forms hitherto classed as one disease. And as to the patient, it should be remembered that a diagnosis which rests upon the basis of the specific etiology is the essential step towards establishing the true indication for treatment, namely, the *Indicatio causalis*. In the case of typhoid and paratyphoid specific treatment is not yet available, but if it ever comes it would not be surprising to learn that the curative serums show the same intimate relationships to the different bacilli as do the agglutinins; that typhoid serum is not curative in paratyphoid, and vice versa. And should this prove true the best chances of proper treatment would rest upon correct diagnosis. In any event it may be found, as we learn more about paratyphoid, that the patients are better treated according to methods different from those now applied to the treatment of typhoid fever, and that paratyphoid is a law unto itself in some respects.

DIABETES AS A MANIFOLD DISEASE.

Vital statistics in recent years show a distinct increase in the death-rate from diabetes mellitus. Statistics showed that the average death-rate in this country was considerably below that of other countries, but it is now approaching the foreign mortality figures. As a rule, this increase in the mortality is not considered significant of an actual increase in the frequency of the disease, but as a result of better methods of diagnosis, fewer cases of diabetes escaping recognition. The terminal stage of diabetes in the past has not infrequently masqueraded under the cloak of tuberculosis, or, that common sequela of continued glycosuria, nephritis.

The most prominent clinical feature of diabetes is the manifold differences that exist between different cases of the disease, so that the conclusion is reached that these distinct types of the disease must have dissimilar pathological bases. This thought is confirmed by many clinicians. Lauder Brunton[1] says that all the forms of albuminuria used to be called "Bright's disease," and all glycosuria "diabetes." In reality there are many different forms of both affections, some of comparatively little importance, while others are malignant in character. The English clinician goes so far as to add that "for very stout people one begins to think what would become of them if they had not some sort of safety valve like glycosuria to get rid of the excess of carbohydrates they took."

It has always been debatable whether mild forms of diabetes ever progressed so as to become severe forms. In most fatal cases there has been no hesitation as to the severity of the affection from the earliest moment of its recognition as true diabetes. Naunyn, who is probably one of the best authorities in Europe on diabetes, says:[2] "Admittedly light forms of diabetes remain always benignant." He acknowledges that apparently mild types of diabetes may grow worse, but he is of the opinion that the transfer of any special case from the category of mild to that of severe diabetes has not been observed with sufficient definiteness to make an absolute opinion in the matter possible. It is certain that diabetes mellitus in persons of obese habit or of a gouty or arthritic diathesis may lead to glycosuria of large amount without seriously endangering the health of the patient or shortening life if certain dietary regulations are not too badly infringed. With regard to the pathological basis of diabetes there are good reasons to believe that change in the nervous system, in the liver, or in the pancreas may each represent the underlying causative lesion of the disease.

To this manifold pathogenesis a new and striking feature has recently been added. Dr. F. Blum,[3] while testing the effects of suprarenal extract injections upon animals, found that glycosuria occurred in 22 out of 25 animals experimented on. Croftan seems to have made the same discovery independently and simultaneously. He says:[4] "The injection of suprarenal extract can cause the excretion of dextrose (in the urine) provided the quantity injected is sufficiently large." He adds that the reason why more must be given to one animal than to another to produce approximately the same excretion remains to be determined.

This new feature of the pathology of diabetes, far from being a source of confusion or discouragement in an already involved subject, is a confirmation of the accepted views of clinical observers as to the manifold nature of the disease. In diabetes, as in so many other affections, pathology is gradually coming to supply, though dilatorily, the scientific basis for the truth of the conclusions of clinical experience. The present situation should be a source of renewed encouragement to labor in the recently almost neglected field of actual bedside observation of disease as the surest source of practical medical knowledge.

THE NEW YORK OSTEOPATHY BILL.

The interference with personal liberty is the usual argument against any proposed new sanitary or moral regulation. It is the pet plea of the quack as well as of the doggery keeper. The unthinking crowd are easily caught by its specious sound, and even those who claim culture and enlightenment are sometimes found using it in advocacy of measures that without this appeal to their prejudice they would repudiate. The word liberty has become a sort of national fetish and is used most by those who have the least idea of its true significance or those who from interested motives find it convenient for them to do so. There is no civil liberty without restrictions; otherwise we would have only anarchy.

1. "Disorders of Assimilation and Digestion," p. 51, Macmillan & Co., New York, 1901.

2. Nothnagel, Specielle Pathologie und Therapie, vol. vii. (1) Naunyn: "Der Diabetes Mellitus," p. 350.

3. Deutsche Archiv f. Klin. Medicin, Oct. 30, 1901.

4. American Medicine, Jan. 18, 1902.

These points are well brought out by Dr. Floyd M. Crandall in a recent article[1] in which he especially reviews the arguments adduced by the osteopaths and their advocates in their attempt to have their methods legalized in New York. He shows by reasoning that ought to be conclusive to anyone not blinded to all facts, that if anything requires special training it is the practice of medicine, and this not for the advantages of existing members of the profession, but for protection and welfare of the public. That the public does not recognize this as it should is one of the unfortunate facts of human weakness, and that the self-interested outcry of violated personal liberty by quacks and their advocates finds such ready acceptance is another.

Much of Dr. Crandall's paper is a reply to the allegations of this kind by a noted writer whose good sense seems to have deserted him when he came to discuss these matters. There are others like him, and were it not for these men of presumably more than ordinary mental ability being thus misled by taking delusive catchwords. it would seem needless to argue that the practice of medicine should be restricted to those qualified by special training. It ought to be a self-evident truth to every man of sense; unfortunately there are many who would resent any implication on their intelligence and yet who not only patronize quackery, but apparently want it undiluted with any possible admixture of genuine medical science. It is osteopathy pure and simple that these people want in New York and elsewhere; the requirement of the passage of the state examinations and demonstration of general medical qualifications by the osteopath would rob it of its virtue by abridging the personal liberty of the citizen to employ an ignoramus to care for his health. New York has, we believe, gone further in the recognition of the principle of the necessary restriction of personal liberty than most other communities, by making suicide a felony. Why should it repudiate its precedents by nullifying much more obviously rational restrictions on its statute books?[2]

THE HYGIENE OF THE RAILROAD CAR.

In a discussion of the hygiene of tuberculosis,[3] Frank W. Wright concludes with a consideration of the duty of common carriers. What he says as related to tuberculosis, might equally well be applied to infectious diseases in general, and especially to those which are commonly known as contagious.

The railroad car, which is inhabited for hours or days by numbers of individuals, and going from one place to another at longer or shorter distances, may readily be a means of spreading infectious diseases from one person to others and from one locality to more or less remote ones. In the ordinary sleeping car, which is supposed to furnish the traveler with every possible comfort, many conditions could not be better for collecting and harboring infectious germs if they had been planned expressly for the purpose. The upholstery, which might be of leather, is usually plush, and the woodwork is often made to furnish as many places for the collection of dust as possible.

From a hygienic point of view, the upholstery and hangings should be as limited as possible, and of such a nature as can be readily renovated; the woodwork should be smooth and without decorations or sharp angles for the collection of dust; provision should be made for ventilation without the necessity of a cloud of smoke and dust being blown through the car; and the dust which collects should either be allowed to remain undisturbed until the car is empty of passengers, or removed with a moist cloth, instead of being periodically distributed through the car by the ubiquitous duster of the porter. Cuspidors containing an antiseptic solution should be provided. At the end of each trip, the car should be carefully cleaned and disinfected by men who understand the practical use of disinfectants. Drinking utensils should be included in the general disinfection, as should also toilet articles for common use, such as hair combs, brushes, etc. Closets should be carefully cleansed and washed with reliable antiseptic solutions. Each railroad should have an official who is a practical hygienist, who would be responsible for the suggestion and execution of all such details as would naturally occur to such a person.

So long as railroad companies vie with each other in making their cars as luxurious and as gaudy as possible, without regard to after-effects on their patrons, just so long will railroad travel be accompanied with danger from infectious diseases.

MEDICAL LIBRARIES FOR MILITARY STATIONS.

An editorial in one of our contemporaries[1] in India calls attention to the fact that in many respects the regulations for the Medical Department of the United States Army do not differ materially from those in the Royal Army Medical Corps of India. A provision which is made for the Medical Department of the U. S. Army which is lacking in the Royal Army Corps, namely, a medical library and the leading medical journals for each military station, is especially noted. The writer is surprised that the Indian medical authorities have not thought of this. If the medical men in the army are to keep abreast of the advances in medicine, such a provision should certainly be made, and our authorities are to be congratulated that they have not overlooked this important matter.

CHARLATANISM AND CHEEK.

A Colorado correspondent has favored us with a circular letter sent out by an "osteopathic college" in Denver which for brazen effrontery caps the climax. The physicians of Colorado and adjoining states, we are told, are

1. New York Medical Journal, Jan. 25, p. 148.
2. Since the preceding was written, we have learned that the bill has been killed in committee.
3. Yale Medical Journal, viii, 1902, 201-207.

1. Indian Med. Gazette, xxxvi, 1901, 461.

receiving these letters and are accepting (?) the gracious offer with alacrity. It is not often that physicians have the opportunity of learning the theory and art of massage for the small sum of $200. Possibly the "individual attainments," plus the financial side, will make it possible for most of them to shorten the time "left to our judgment," with the right kind of persuasion. For the benefit of those who may not have been favored with a copy of the original, we reproduce the letter, grammar and all:

To Physicians: Having several medical graduates to apply for a short course in osteopathy, we are considering the starting of a class February 1st, for their benefit, and will do so if a sufficient number will enter for it. We will accept medical diploma for the subjects usually taught in medical colleges, and give a short review of special osteopathic features in physiology, together with regular lessons in osteopathic theory, principles and practice, as well as practical clinical work. The price will be made $200, and while nominally requiring ten months, this time may be shortened if the individual attainments of the applicant justify it. This, however, must be left to our judgment, as determined by our examinations of the applicant. Our secretary will be pleased to call on you if you will signify your willingness to consider the matter with him.

PROTECTIVE INOCULATION AGAINST TYPHOID FEVER.

The testimony of British military surgeons in South Africa continues favorable to the usefulness of inoculation with sterile cultures of the typhoid bacillus in reducing the mortality from typhoid fever and in diminishing the severity of the disease. According to the most recent report, as made by Major C. Birt,[1] there occurred at Harrismith, between September, 1900, and September, 1901, 1210 cases of typhoid fever, of which 947 were among uninoculated and 263 among inoculated individuals. Of the uninoculated, 135 died, or 14.25 per cent.; of the inoculated, 18 or 6.8 per cent. The average duration of the pyrexia was 28 days in 317 cases in uninoculated persons, and 15 days in 151 cases in inoculated persons, the average maximum temperature in the former being 103.7, in the latter 102.9. The percentage of cases among the uninoculated in which relapse took place was 24, as against 6 among the inoculated. Constipation was present in 19 per cent. of uninoculated cases, and in 33 per cent. of inoculated cases. In the cases with diarrhea there was an average of 4.4 daily evacuations among the former, and of 2.6 among the latter. In all the fatal cases among inoculated persons, eight months or more had elapsed since the protective vaccination. That immunity to typhoid fever is not readily established in some persons is shown by citation of the case of an uninoculated man who, four months following a mild attack of the disease, died as a result of a virulent attack. The statistics that have thus far been presented go far to sustain belief in the efficacy of protective inoculation against typhoid fever as practiced by the English military surgeons, and they more than justify continuance of the practice.

1. British Medical Journal, Jan. 11, 1902, p. 75.

POLITICAL INFLUENCE OF PHYSICIANS.

A newspaper editorially remarks that "those who have the making and executing of the laws, whether they be called politicians or statesmen, are prone, as a rule, to underestimate the value of the good opinion and the influence of physicians."[1] It is refreshing to see such truth announced from such a quarter; the newspapers themselves have not, as a rule, sufficiently appreciated the possible influence of the medical profession. The paper goes on to say that the physician comes in close touch with the people than the representative of any other profession, and that the "doctors could insure the success of any candidate for any elective office in the state if only any considerable percentage of them would undertake it. . . . A candidate for a state office could very well afford to say that in anything like a close contest, if he had all the physicians with him, he might not care what class supported his opponent. If the resolutions passed by county medical societies are not heeded by legislatures and executives they are antagonizing a very powerful element." The editorial further says that because physicians do not habitually dabble in politics or constantly seek for office, their influence is the more potent when once it is thoroughly exerted. This we believe is a truth and if we act with due wisdom, showing by our conduct that when we do act our motive is the public welfare as well as our own interests, we can be invincible. There are enough physicians in every state to control medical legislation if they will only act together. Thackeray says that any woman without an actual hump can marry any man she pleases; man's safety is that women are like the beasts of the field; they do not know their own strength. The same might be said of the physicians of the country; they have not appreciated their own power. If quackery thrives and gains recognition and privilege under the law it is the fault of an inactive and unorganized medical profession.

1. The Utica (N. Y.) Press, January 22.

PRUDERY OR POLITICS.

The warden of the Cook County Hospital, a layman who has nearly absolute power in that institution, has long since prohibited bedside clinics, and has now put his veto upon all public gynecologic clinics whatever. The superintendent of the corresponding institution in Milwaukee, Wis., has, it is reported, followed his example and now prohibits clinics or the attendance of medical students at operations on women where any exposure is necessary. This cuts off a very important part of the clinical instruction, and ought certainly to have good reasons to justify it. So far as we have seen the excuses are that it shocks the sensibilities of the warden, and especially that some medical students have been discourteous in their behavior. As regards the first point it does not probably occur to the official that in this he is setting himself up as a critic of all who have preceded him, and of all the physicians in charge who have not, as a class, been accused by others of not possessing gentlemanly instincts, as is implied by the course he adopts. There need not be anything degrading or necessarily offensive to a modest patient in a gynecological clinic, and we believe that it is the practice, so far as possible, to respect her feelings and wishes. Foreign observers have remarked on the contrast in this regard between methods here and abroad and have criticised what seemed to them the superfluous delicacy of American surgeons. This answers also the second alleged excuse; if there was improper behavior on the part

of students it should have been checked and the guilty individuals excluded, not necessarily the whole class. It is not necessary to burn a house down to roast a pig. If any of the instructors or surgeons fail to cultivate a proper morale at their clinics they could be admonished, or even excluded, should that extreme measure be required. If they have not, the action taken is a slander by implication. It reflects also upon the discipline maintained and does not suggest the highest type of executive ability on the warden's part. If a man with absolute power in such an institution can not ensure proper conduct except by destroying one of its useful functions, it might be well to have someone better qualified take his place. There are those who could permit gynecologic clinics without the suspicion of impropriety. On the whole, the transaction suggests an unacknowledged motive; it appears to be to a large extent a gallery play of a politician to catch the sentimental public. It will fulfill its purpose and then gradually the old order will be resumed. Politically managed hospitals can only reform spasmodically, and even such pseudo reforms will follow the same rule. A judicious restriction of free clinics, not only gynecologic, but generally in all departments of surgery and medicine, would be undoubtedly a good thing for the medical profession, and perhaps not altogether a bad one for the public. Any such wholesale cutting off, however, of the means of instruction in an important specialty is condemnable in every sense of the word.

Medical News.

CALIFORNIA.

Banquet Dr. Fenger.—A number of Los Angeles physicians gave an informal banquet at the Hotel Green, Pasadena, January 26, in honor of Dr. Christian Fenger, who has been visiting in Southern California. Dr. Norman Bridge was toastmaster, and among the speakers were Drs. J. H. McBride, Walter Lindley, George E. Abbott, F. F. Rowland, J. M. Radabaugh and F. B. Bullard.

Personal.—Dr. Hiram A. Hess has been elected surgeon-in-charge of the Pacific Hospital, San Francisco.——Dr. William F. Roblee and family, Riverside, have started on a trip to Europe.——Dr. William C. Hopper has been appointed resident physician of St. Mary's Hospital, San Francisco, vice Dr. Joseph W. Henry, resigned.——Dr. George H. Evans, San Francisco, secretary California State Medical Society, is in New York doing post-graduate work.

DISTRICT OF COLUMBIA.

Central Dispensary and Emergency Hospital.—At the meeting of the attending staff held February 1, the appointment of Dr. Francis J. Doyle to succeed Dr. Kuhn was approved. Dr. Kuhn has passed a competitive examination, and has been appointed resident physician of the Columbia Hospital.

Health of the District.—The report of the health officer for the week ended January 25 shows the total number of deaths to have been 122, of which 64 were white and 58 colored. At the close of the week there were 42 cases of diphtheria, 4 cases of scarlet fever and 2 cases of smallpox under treatment; 101 births were recorded.

Eastern Dispensary.—The quarterly report of the Eastern Dispensary shows the institution is growing rapidly and doing excellent work. The report shows that of 423 applicants for free treatment 101 were refused on the ground of being unworthy and impostors on medical charity. Twenty-eight operations were performed, 1504 prescriptions compounded and 255 emergency cases treated.

Columbian University Hospital.—The Commissioners of the District have refused to grant free water to the Columbian University Hospital. The extra expense of water will be a great hardship to the university as it is a self-supporting institution for the clinical instruction of medical students and receives no appropriation from Congress. Under the present law institutions receiving support through Congressional appropriations are granted free water.

To Care for the Sick Poor.—The Associated Charities of the District recently held a conference looking towards the betterment of the sick poor, the purpose being to assist the worthy poor who are needy of medical treatment and yet shrink from the painful notoriety now given in cases of application for charity medical treatment. The Secretary of the Charities discussed the methods and ways and means with Dr. Burnett, Health Officer Woodward, Drs. G. M. Kober and H. L. E. Johnson; Messrs. J. W. Boardman, president of the Emergency Hospital, Ex-District Commissioner White and Ex-Secretary of State Foster. Resolutions covering the subject were adopted to be presented to the Medical Association of the District for approval.

GEORGIA.

Smallpox is prevalent among the negroes in Elbert County.

School Inspection.—The schools and school-children of Atlanta are to be inspected systematically by a corps of 36 physicians which serves without compensation.

Counterfeiter a Physician.—In the United States Court at Rome, Dr. Russell D. Stallings, Clem, Carroll County, was recently sentenced to serve five years in the penitentiary and to pay a fine of $500 for counterfeiting and passing spurious coin.

Marine-Hospital for Savannah.—Senator Clay has introduced a bill providing for a marine-hospital for Savannah. The importance of Savannah as a shipping port and the fact that there is no marine-hospital nearer than Wilmington, N. C., are the chief arguments advanced.

Personal.—Dr. William C. Jarnagin has been re-elected president, and Dr. Everard H. Richardson, secretary of the Atlanta Board of Health.——Dr. Ralph Comer, Dyson, has located in Tignall.——Dr. Howard J. Williams has been chosen to succeed the late Dr. William F. Holt on the medical board of the Macon Hospital.

ILLINOIS.

Hospital Consecrated.—The new St. Francis Hospital, Peoria, was consecrated with imposing ceremony, January 29. The building was recently completed at a cost of $120,000.

The Irreverent Press.—In a recent issue of the Chicago *Record-Herald*, the new Hospital for the Incurable Insane, at Bartonville, is editorially dubbed a "Home for Incurable Politicians."

Personal.—Dr. J. Harvey Banks, Atlanta, has moved to Lincoln.——Dr. John W. Turner, Homer, has disposed of his practice to Dr. Bashaw, Berlin.——Dr. D. J. Evans, Chicago, has been appointed assistant to Dr. F. G. Hall, of the Burlington Voluntary Relief, Galesburg, vice Dr. Charles Hamilton, resigned.——Dr. John P. Riggs, Roseville, has moved to Plano.——Dr. William R. Kincaid, Elkhart, has moved to Denver, Colo., and is succeeded by Dr. Joseph T. Woodward.——Dr. Thomas J. Stafford, Stockton, has been appointed an auxiliary member of the State Board of Charities.——Dr. O. H. Irwin, Sheldon, has sold his practice to Dr. Ethan Allen.——Dr. L. St. C. Whitley, Springfield, has returned from a trip of several months through Europe and South Africa.——Dr. Charles W. Rook, Quincy, has returned to his old home near Bowen, Hancock County.——Dr. John C. Owens, Plainfield, recently fractured his hip in a runaway accident, near Aurora.——Dr. Emmett F. Enos, chief of staff at the Illinois Eastern Hospital for the Insane, Kankakee, has resigned.——Dr. Burdette E. Le Due, Plano, has retired from practice on account of ill-health.——Dr. Simeon M. Robertson, Gresham, has moved to Mount Vernon.——Dr. Roy S. Blackburn, Ray, has located in Lowpoint.——Dr. Benjamin D. Baird, Williamsfield, has opened an office in Galesburg.——Dr. Everett H. Butterneld, Ottawa, has gone to Baltimore for post-graduate study.——Dr. J. M. Mitchell has located in Pontiac.——Dr. Frederick C. Taylor, Florid, has moved to Granville.——Dr. Julian W. Zinn, Graymount, has located in Joliet.

Chicago.

Swedish Hospital.—Plans have been prepared for a hospital to be built for the Swedish Mission Association in Bowmanville or Lake View, to cost about $50,000.

Proposed College for Women.—It is incorrectly announced in the daily press that Dr. Eliza H. Root and three Evanston women are heading a movement to organize a medical school for women. The statement is not true.

Co-Education at Rush.—Despite the protests and opposition of certain members of the faculty, a resolution was passed by that body January 24, recommending the admission of women to all branches of the Medical Department of the University of Chicago.

No Quarantine.—Although smallpox is prevalent in Iowa, Indiana and Wisconsin, the Health Commissioner will not quarantine against these states, but will institute an inspection system to protect Chicago from the disease. There are at present 22 patients in the Isolation Hospital.

The City's Deaths.—The deaths for the week ended February 1 numbered 517, equivalent to an anual death-rate of 14.80 per 1000. This was an increase of 37 deaths over those of the week before—chiefly from acute intestinal, heart and nervous diseases and from consumption, pneumonia and scarlet fever. Influenza is still very prevalent and, although of a mild type in itself, is mischievously and often fatally complicated with many other maladies.

Combine Against Smallpox.—An effort in preventive medicine on a scale of considerable magnitude was inaugurated last week by the Health Department. Its field is an area of some 600,000 square miles of territory in the ten states of which Illinois is the southern center and the remotest boundaries of which are within a few hours' railway travel from Chicago. Between Dec. 28, 1900, and Jan. 24, 1901, there were only 1070 smallpox cases reported in this territory, while during the similar period ended Jan. 24, 1902, there were 10,820 cases reported—an increase of 911 per cent. At a conference between the representatives of the chief railroads centering in Chicago and the Health Department, ready assent was given to the plan proposed which contemplates wholesale vaccination and revaccination in every infected locality; the provision and maintenance of suitable isolation hospitals where necessary; thorough disinfection of smallpox premises and belongings; strict inspection of all persons offering to travel from infected localities and refusal to carry those who do not comply with the requirements. Special attention will be paid to the conditon of employes in manufacturing establishments—particularly those of textile fabrics—and the railways will set the example by still more rigorously making recent vaccination a condition of further employment. Competent vaccinators and supplies of pure, tested vaccine lymph will be furnished gratis in all proper cases. The work along each railway line will be under the direct charge of the medical director or chief surgeon of the company and a central office will be maintained in the city for the receipt of reports, requisitions, etc., from those engaged in the campaign. Dr. Reynolds has volunteered to take charge of the central office.

MARYLAND.

Hospital for Naval Academy.—The Secretary of the Navy has asked for an additional $200,000 from Congress for a hospital for naval cadets at Annapolis. Singular to say, this was overlooked in the plan for the new naval academy.

The ladies of the Children's Hospital of the Home of the Friendless will have a concert by the famous Paderewski on February 28 for the benefit of the hospital, which is one of the most completely appointed child's hospitals in the country.

Reception at Johns Hopkins.—A reception was given the students and faculty of Johns Hopkins University by the Medical Department January 25, in the assembly room at the Johns Hopkins Hospital. There was a large gathering, the object being to promote acquaintance.

The deaths for week ending February 1 were 215, pneumonia causing 34, consumption 21, heart disease 19, Bright's disease 13, cancer 8, diphtheria and influenza each 4, typhoid fever 2. A number of cases of diphtheria, scarlet fever, whooping cough and variola are reported over the city.

Personal.—Assistant Surgeons George E. Marchand, of Annapolis, and J. H. Ullrich, of Baltimore, have been promoted to be full surgeons in the United States Coast Survey Service. ——Dr. Claude L. Holland, resident physician of Franklin Square Hospital, Baltimore, has resigned and will go into practice in Morgantown, W. Va.——Dr. J. E. Dwinelle, Baltimore, was knocked down by a coaster, receiving a severe scalp wound.

Quarantine Physician's Report.—The report of the quarantine physician recommends the erection of a crematory for the burning of the bodies of those dying of smallpox and yellow fever. Thirty-nine patients were treated during 1901, 21 being smallpox cases, and 2 being scarlet fever. The expenditures were $17,961 and the fees and fines from 100 vessels inspected were $17,805, the station being virtually self-supporting.

Neglect of Negro Insane.—In the report of the Lunacy Commission to the Governor, Dr. John Morris, president, calls attention to the neglect of the negro insane in Maryland. Insanity is rapidly increasing among the negro population as the result of the idleness, lawlessness, debauchery, drunkenness, poverty, etc., so prevalent among them. Maryland is far behind her sister states of the South in the care of such cases, notably Virginia, North Carolina, Georgia and Alabama.

Shepherd and Enoch Pratt Hospital for mental and nervous diseases, Baltimore, shows 109 men and 100 women treated during the year. Sixteen died and 101 were discharged. Of the discharged 27 were recovered; 19 much improved; 18 improved, 31 unimproved, and 6 were hysterics, inebriate or drug users. Only curable cases were admitted in 1901. A building has been erected for recreation. Mr. Seymour Ludlam, an advanced student in the Johns Hopkins School, and Dr. Glanville G. Rusk, have been added to the hospital staff.

MASSACHUSETTS.

Memorial Hospital, Worcester.—At the annual meeting of the trustees of the hospital it was announced that Mrs. George Crompton Wood had given $20,000 for an operating room.

East Boston Vaccinated.—A corps of 125 vaccine physicians descended on East Boston, January 26, and made a house-to-house visitation, inspecting or vaccinating every person in every house. More than 15,000 were vaccinated.

Dr. Adolf Meyer, instructor at Clark University, and head pathologist at the Massachusetts Insane Hospital, at Lake Quinsigamond, has accepted the position of head pathologist of the New York Pathological Institute, in New York City, to succeed Dr. Ira Van Giesen, resigned.

For Harvard Medical School.—The president of the University has announced the offer of John D. Rockefeller to give $1,000,000 toward the three buildings needed for the medical department, provided that $500,000 is subscribed for the purchase of land.——By the will of Miss Ellen O. Proctor, of Brookline, $50,000 is bequeathed to the school for the study of chronic diseases.

MINNESOTA.

St. Barnabas Hospital, Minneapolis, is to erect a three-story building for a nurses' home, to cost $25,000.

Addition to Anoka Hospital.—A $30,000 addition is to be built at the Anoka State Asylum, and also a cottage to cost $40,000.

Indian Hospital Burned.—The Agency Hospital connected with St. Columbs Hospital Mission at the White Earth Agency was entirely destroyed by fire January 19. Fortunately no patients were in the hospital.

Enforcing Vaccination Law.—Three residents of St. Paul who had refused to allow vaccinators of the city health department to vaccinate them after they had been exposed to smallpox, each paid a fine of $10 for their recalcitrance.

Anatomical Laboratory on Fire.—A fire in the anatomical laboratory of the University of Minnesota, Minn., January 25, caused a loss of $10,000. By heroic work on the part of the students, the valuable libraries of Professors Erdman and Reed were saved, but about 20 cadavers and a valuable collection of skulls were burned.

MISSOURI.

Golden Wedding.—Dr. and Mrs. Edward J. Atkinson, Nevada, celebrated their golden wedding, February 3.

Physicians Feast.—The annual banquet of the City Hospital Alumni Association, St. Louis, was held at Faust's at the conclusion of the regular monthly meeting.

Marine Hospital a Ruin.—It is estimated that it will require $60,000 to put the Marine Hospital, St. Louis, into habitable shape. It was erected about fifty years ago and has had little in the way of repairs done since that time.

Dr. Gregory's Semi-centennial.—Dr. Elisha H. Gregory, St. Louis, professor of principles and practice of surgery and clinical surgery in Washington University, ended his fiftieth year of lectures at that instituton, January 17. At the close of his lecture he was given a large bouquet of roses and violets

and eulogistic addresses were made by the chancellor and members of the faculty.

Medical Association of Missouri.—The Committee on Scientific Communication of this Society, consisting of Drs. Blencowe E. Fryer, 520 East 9th St., Kansas City; J. H. Dunlan, Century Building, St. Louis, and M. B. Overholzer, Harrisonville, announces that it is ready to receive titles of papers to be read at the coming meeting to be held in St. Joseph, May 20, 21 and 22. The Committee will classify subjects or topics and requests that each author prepare a synopsis of his paper, not to exceed 100 words, and that the title and synopsis be in the Committee's hands not later than April 1.

NEW YORK.

For Medical Research.—Charles T. Ham has given $5000 to the Rochester Academy of Medicine to be used to further medical research.

Utica Isolation Hospital.—A bill has been introduced appropriating $5000 for the erection of a hospital for contagious diseases in Utica.

Gifts to Hospitals.—Maternity Hospital, Niagara Falls, has received $4000 from the relatives of Benjamin F. Thurston. ——Schenectady Hospital has benefited to the extent of nearly $2000 by Hospital Sunday.——William C. Whitney has presented $6000 to the Mineola Hospital.

The Lunacy Bill.—According to present appearances, Governor Odell's bill to abolish the lay boards of managers of the State hospitals will become a law. It passed the Senate by a vote of 97 to 45, and is expected to pass the House despite the strong opposition it has aroused.

New York City.

Dr. Joseph S. Carreau, who died in this city on January 7, is said to have left an estate worth nearly $100,000. There are many relatives who claim a share in the estate, and so far it has been impossible to find any will.

Loomis Hospital for Consumptives.—A woman's guild, comprising 200 members, has just been organized. Its special work will be in aid of the Loomis Hospital for Consumptives in New York City and for the charitable department of the Loomis Sanitarium at Liberty.

New Site for Woman's Hospital.—The present site of the Woman's Hospital has been sold to the New York Central Railroad for $450,000. It is probable that a new site will be purchased, consisting of 14 lots on the east side of Amsterdam Avenue between 109th and 110th streets.

Dr. Manley Vindicated.—In part IX of the N. Y. Supreme Court, before Judge McLean, an action was brought by Selina Schneider against Dr. Manley for alleged malpractice in the unnecessary removal of a joint of the thumb. After a two days' trial, the jury, after a five minutes' deliberation, brought in a unanimous verdict for the defendant.

Tuberculosis Pavilion Opened.—During the past week the city authorities have opened a tuberculosis pavilion in connection with the Metropolitan Hospital on Blackwell's Island. It contains 120 beds, and it is hoped that there will be a sufficient appropriation forthcoming to allow of building a long, open porch, where, protected from the wind, the patients may get the benefit of open-air treatment. Special diet will be provided, and it is intended to make use of forced alimentation.

Trustees for the City Hospitals.—On February 1, Bellevue Hospital and the other hospitals under the control of the city passed out of the jurisdiction of the Commissioner of Charities and under the charge of seven trustees, who serve without salary, and are not subject to the Mayor's general power of removal. They will have the full management of the hospitals, and will appoint and remove physicians, superintendents, nurses and attendants. It is hoped by this system to take these hospitals out of the domain of politics.

Smallpox.—According to Dr. Alonzo Blauvelt, Chief Inspector Division of Contagious Diseases, there have been between 60 and 70 cases of smallpox in the city during the past month. Mr. William C. Fosdick, of Flushing, Borough of Queens, has instituted habeas corpus proceedings to compel the return of his four-year-old daughter from the Isolation Hospital on North Brother Island. She was forcibly removed from her home, a diagnosis of smallpox having been made by one of the physicians of the Health Department. Four other physicians certified that the child was only suffering from chicken pox, and she was removed, it is claimed, in direct opposition to orders from a Supreme Court. A girl who was ill with smallpox in a tent on the grounds of the Smith Infirmary was nearly chilled to death in a storm, which put out the fire in the stove, knocked down the smoke-pipe, and nearly blew down the tent. The two nurses finding it impossible to keep the child warm by bedclothing, jumped into the patient's bed and kept her warm until morning.

Dynamite Causes Havoc.—An accidental fire in a small powder house in which was stored a quantity of dynamite for use in the subway tunnel, caused a very severe explosion at Park avenue and Forty-first street. The Manhattan Eye and Ear Hospital, which was close by the spot where the explosion occurred, was badly shaken and damaged, so that several days will be required to put it in repair. There were 63 patients in the hospital, and most of them, together with the nurses and physicians, were more or less injured by flying glass. Dr. T. Passmore Berens was hurt, and among the patients was a boy who was convalescing from an operation for abscess of the brain. No one of the many in the building at the time was seriously hurt, but the entire front of the building was wrecked and nearly every room made untenantable. About sixty windows were broken in the Hospital for Ruptured and Crippled, situated two or three blocks distant from the explosion, and the children were thrown into a panic. While six surgeons, in an ambulance from the Roosevelt Hospital, were hurrying to the scene, the ambulance collided with a delivery wagon. One surgeon and the driver were thrown into the street, and an axle of the ambulance was broken. Finding the ambulance disabled, the surgeons seized the stretcher and ran on. The contractors engaged in constructing the section of the subway tunnel on Washington Heights have been hurrying along the work by using heavy blasts. One of these was so severe that it shook the building of the Hebrew Sheltering Guardian Society Orphan Asylum, causing plaster to fall from the ceiling in nearly every room, and pictures and ornaments to tumble from the shelves. The children ran through the corridors screaming with fright, and the superintendent was not able to get any satisfaction either from the contractors or from the police. The old question of abolishing the coroner's office received a new impetus by the spectacle which Coroner Goldenkranz made in connection with the dynamite disaster in the tunnel. Although he talked loudly about being "a constitutional officer," it should not be forgotten that this office was expressly stricken from the revised constitution in 1894 in order to make it easy for the legislature to abolish it. It is difficult to see why this has not yet been done, especially when the good example set by Massachusetts has been so long before us, but the time seems ripe for such action by the legislature.

Buffalo.

Academy of Medicine.—Dr. William R. Pryor, New York City, addressed the Section of Obstetrics and Gynecology of the Buffalo Academy of Medicine on "Pelvic Suppuration; When Shall We Operate by the Abdomen and When by the Vagina?"

Personal.—Health Commissioner Walter D. Green has appointed Dr. N. L. Burnham as city physician for the first district, to succeed Dr. George F. Cott, resigned.——Dr. Matthew D. Mann was elected president of the Society for Beautifying Buffalo. Dr. Mann is also one of the park commissioners.——Dr. Lucien Howe received a gold medal for the second time from the New York State Medical Society relative to a new staining process for the muscles of the eye.

NORTH CAROLINA.

Personal.—Dr. T. Evans McBrayer, Shelby, has been made surgeon to the S. C. and G. E. Railway.——Kennersville has a new physician, Dr. Andrew L. Wynn, who was formerly at Johnston Station, Ga.

Medical Department of State University.—The State University Department of Medicine is to be located at Raleigh. The faculty of the department, besides the dean, Dr. Hubert A. Royster, will include Drs. Richard H. Lewis, W. I. Royster, Dr. Augustus W. Knox, Kemp P. Battle, Jr., and others, who will be chosen by the executive committee.

Wilmington Physicians Meet.—At a recent meeting of the physicians of Wilmington over which Dr. Walter C. Galloway presided, Dr. Frank H. Russell, acting as secretary, Drs. William J. Love, Thomas S. Burbank, Frank H. Russell, and William D. McMillan were selected as visiting physicians to the James Walker Memorial Hospital. Drs. Lionel H. Love, Andrew H. Harris, G. K. Collier, N. M. Wetzel, R. Edgar Zachary, Thomas R. Little and Frank H. Russell were appointed to receive and entertain the State Medical Association.

Medical Society of the State of North Carolina.—This Society will hold its forty-ninth annual meeting at Wilmington, June 3 to 7. On the morning of the second day an entire new Board of Medical Examiners will be elected to serve for six years. The Pittman prize of $100 will be awarded for the best essay on any medical subject. The president is Dr. Robert S. Young, Concord, and the secretary, Dr. George W. Pressly, Charlotte.

VERMONT.

The Vermont Medical Monthly.—The January number of this journal—the organ of the Vermont State Medical Society and of the Thurber County Medical Association—appears in an entirely new form and dress and considerably enlarged in size. These improvements show that the monthly is in a flourishing condition, which is certainly gratifying. One of the most encouraging signs is the fact that journals published by or for medical societies are in a prosperous condition and increasing in number.

CANADA.

Notre Dame Hospital Quarantined.—Smallpox has developed in one of the attendants at the Notre Dame Hospital, Montreal, and the whole institution will be under quarantine until the 12th of the month; there are over 200 patients in the institution.

Big Increase in Smallpox.—In Ontario 629 cases of smallpox developed during the month of January. The patients are scattered over twenty-eight counties with eighty-seven centers. Lecturing before the students of the Toronto School of Medicine on January 31, Dr. Hodgetts, provincial inspector, stated that the spread of the disease could be attributed to the ignorance of the profession.

Blackmailing Doctors.—Two well-known physicians of Toronto have during the past week been subjected to threats for the purpose of extorting money from them. When one of the physicians was visited in his office by the husband of a woman whom he had been called to attend and financial demands made upon him, he quickly laid a trap for his would-be blackmailer by requesting another interview, when he had a concealed witness present. The second physician had been called to attend the child of the family, and later the husband visited him at his office and made the same demands, claiming that his wife had been insulted. In this case he was shown the door. The case is now in the hands of the crown attorney.

County Medical Inspectors.—It is understood that the Ontario Government will be strongly pressed to amend the Ontario Health Act at the present session of the legislature to provide for the appointment of County Medical Health Officers, and at the same time fixing an adequate salary to be paid by each municipality for the proper performance of their duties. As at present constituted the act provides for township officers of health, but as the remuneration for this is only about $50 to $100 per annum, it can not be expected that any health officer is going to take charge of an epidemic of smallpox or other contagious disease for that paltry salary; hence the need of county officials with more powers and a larger remuneration.

The Southwestern Medical Association of Manitoba.—A few months ago this new medical association was organized among the practitioners of medicine in the southwestern part of the province of Manitoba and out of 70 available practitioners for membership in that district, no less than 67 have already become members, and there is every reason to believe that the remaining 3 will soon come in. This speaks well for an attempt at organizing the profession in Manitoba, as it is intended to carry on the good work of organization until the whole province is brought within its scope. The three main objects for the founding of this association are as follows: "We have decided to establish a new tariff for insurance companies and lodge work, which is as follows: Examination for admittance to lodges without insurance, $2; examination for admittance to lodges with insurance, $3; examination for admission to level premium insurance companies, $5. All members of this Association have signed a pledge binding themselves to this tariff from January 1, 1902. The Association has also arranged a provisional tariff of fees to which all are to adhere as closely as possible. Then they have decided that members of the profession of medicine would be acting in their interests to send out quarterly statements of accounts, and that all contract work in relation to lodge practice should be discouraged.

FOREIGN.

Annual Ball of the Paris Internes.—The parade of the floats this year at the ball, December 16, represents the hospitals of Paris, headed by the Hotel Dieu, showing "The Triumph of Cocain." The harvesting of the coca was first represented, then, after a group of physicians of antiquity and of the dark and middle ages, came the "Apostle of Spinal Cocainization." He was followed by a huge column portraying a spine with the needle inserted at the proper place. After this came the "inconveniences of cocain"—figures representing the headache, diarrhea, hemiplegia, etc., and finally a chariot with the "apotheosis of cocain." The Tenon hospital portrayed "the Northern Barbarians Returning from Mytilene with Mytilene (methylene) Blue."

Overcrowding of the Profession in Belgium.—The *Gazette Méd. Belge* states that the year 1901 continued the overcrowding of the profession. Parents are not discouraged by the difficulty of making a living from the honest practice of medicine. They see the rapid success of unscrupulous persons who disregard the ethics and dignity of the profession, and they push their sons into the medical courses advising them to mix a little charlatanism with their medicine. The average regular physician in Belgium earns at most 3000 franes a year, scarcely $600. The *Gazette* adds that the number of patients is actually more than it was thirty years ago. If the number of physicians had not increased out of all proportion, the emoluments of the profession would be better than in the "good old days."

Advertisements of Quacks in the German Dailies.—The Munich local Aerztlicher Verein recently appealed to the lay press not to publish the advertisements of a certain notorious charlatan. Several of the dailies asserted in reply that the advertising department of a daily paper is not qualified to distinguish between fraudulent and bona fide medical advertisements. The *Augsb. Abendztg.*, however, added that all that a reputable paper can do and should do is to refrain from publishing the advertisements of notorious swindlers, and to lay before their readers all official or judicial revelations in regard to swindling operations conducted by advertisements, and besides this, should warn the public to keep its eyes opened. The press can never assume the office of official guardian of the public. The *Munich Med. Wochenschrift* considers this a valuable concession and, if realized, a great advance. It calls upon the local medical societies to have their press committee keep the papers posted in regard to "notorious swindlers."

Alcoholism in Russia.—It is difficult to say if it is well for the state to control the sale of spiritous liquors. There are two countries where this principle is carried out, Switzerland and Russia, and in the latter the results would not seem to be encouraging, from the temperance point of view. According to Dr. Fuster, who has seen the conditions obtaining in the different states of Europe, there is no country where so much intemperance exists as in Russia. On Sundays, for instance, drunkards are to be met in almost every street of the small towns. The police do not interfere in general. The shops where liquor is sold are only open at certain hours of the day, and crowds gather around their doors, each man holding in his hand an empty bottle which is to be exchanged for one containing alcohol at 40°. Two-thirds of a quart costs only twenty-two cents, but smaller bottles are sold for only four cents. Cases of death from alcoholic poisoning are not infrequent. Dr. Fuster expressed his opinion that the enactment of restrictive laws was not the best way of suppressing alcoholism, but rather the educating of the moral sense.

PARIS LETTER.

Methylene Blue in Buccal Infections.

Professor Chauffard has been trying methylene blue in certain forms of tonsillitis, especially in the ulcerative form. He considered that he had so good a result that for him it might serve as a means of differentiating ulcerative tonsillitis from cancer of the tonsil. Dr. Moizard, the celebrated child specialist, tried it in his service recently, and he told me that he had obtained no good result from its use, and he preferred to use tincture of iodin when in need of some energetic agent.

Eberth's Bacillus in the Blood in Typhoid Fever.

The presence of Eberth's bacilli in the blood in typhoid fever has been the subject of a good deal of discussion of late at the Medical Society of the Hospitals. Dr. Jules Courmont has

n carrying out investigations on this subject, and he declares t in ordinary forms of typhoid fever the bacillus is always nd even before one fifth day. It remains in the blood until end of the third week, and in certain prolonged forms with apses it may remain even longer. There is no relation be-een the presence of bacilli in the blood and the agglutinating ver of the serum, which is only seen very much later in some es. A special method is needed, which consists in mixing to four cubic centimeters of venous blood with five hundred ic centimeters of bouillon. There are at times no results oduced by using only a few drops of blood in a small quantity bouillon. At a meeting of the Academy of Medecine this e subject was discussed, Dr. Chantemesse remarking that se investigations had already been carried out in Germany a r or two ago. According to Dr. Chantemesse, negative re-ts had been obtained so far, because too much blood was ed to the bouillon, and the serum prevented the growth of bacilli.

Professor Jaccoud Retires.

Dr. Landouzy has been named professor of clinical medicine, ceeding to Jaccoud, who has been placed on the retired list. Gilbert, a professor agrégé of the School of Medicine, has en Dr. Landouzy's place as professor of therapeutics. He a relatively young man, being only forty-three years of age. ofessor Landouzy, son of a distinguished physician, was sen professor unanimously in 1893. He is well known for aphorism on therapeutics, which he said should be "clinical, thogenic, physiological and opportunist. Clinical as to its rces of information, pathogenic in its indications, physio-ical as to the means employed, and opportunist in the isions that are reached."

New Treatment for Sprains.

A new treatment for sprains is being advocated. It consists the use of electricity. Several English authors have, it ms, spoken vaguely about its use, and Remak, the German thor, recommends the use of the continuous current, according Tripier. Apostoli, however, believed in faradization, and h is the method which has given so far the best results. The trodes consist of two large tampons of coal covered with amois skin and the negative pole is placed and moved over injured spot. The sitting only lasts five to ten minutes, d produces so rapid a result that the patient can sometimes lk immediately after. Two applications of electricity should made every day in some cases, and rapid improvement will noticed.

Census of 1901.

The census taken in France in 1901 shows that the popula-n is increasing very slowly. The results showed an increase 444,613 inhabitants during the last five years, which is much ter than during the period from 1891 to 1896, when the in-ase was only 175,027. Other nations are increasing much re rapidly, the population of Germany has increased about 00,000 during the last ten years, that of Austria-Hungary 00,000, and that of Great Britain about 5,000,000.

Biliary Lithiases.

Dr. Pauchet, a former interne of the Paris hospitals, speak-of an operation for spontaneous rupture of the biliary icle with recovery, remarked recently that there was no dical treatment of biliary litniases, and drew a parallel ween a stone in the bladder and one in the vesicle. Cholecys-omy was no more dangerous an operation than cystotomy.

Paris Seeking Better Milk Supply.

The milk supply of Paris is being extensively discussed at sent in the political papers, especially in the *Matin*, which instigated a crusade against milkmen who adulterate the oduct they sell. A league is to be formed called the League the Defense of Human Life. The *Matin* has published most rgetic articles, describing the methods used. Milk is some-es sold directly to the buyer, and in such cases there is not ch chance for adulteration. In other cases milk is first lected from producers outside Paris, then brought in and d to the dealer by a third party, so that it passes through r intermediaries. Milk which is bought outside Paris at n 9 to 11 centimes the quart costs from 40 centimes to a nc inside Paris. Not only is milk more or less modified by use of various concoctions, but it is also sensibly diluted the use of water. The new league will prosecute directly its members and police supervision of milkmen has become late more efficient.

Association News.

New Members.

The following is a list of new members of the American Medical Association for the month of January, 1902.

ALABAMA.

Betts, W. F., Evergreen.
Peacock, L. E., Blocton.

ARKANSAS.

Russmunn, W. C., Helena.
Montgomery, W. A., Atkins.
Warren, G. A., Imboden.
Tarrant, J. R., Monticello.

CALIFORNIA.

McMurdo, J. R., San Francisco.
Henderson, J. J., San Francisco.
Williamson, J. M., San Francisco.
Ebright, G. E., San Francisco.
Power, H. D. A., San Francisco.
Fitzgibbon, G. J., San Francisco.
Plymire, D. B., San Francisco.
Johansen, Erneste, San Francisco.
McIntosh, A. M., San Francisco.
Cross, W. W., Visalia.
Still, J. J., Los Angeles.
Dundas, R. C., Los Angeles.
Colburn, J. R., Los Angeles.
Cates, H. G., Los Angeles.
Phelp, W. S., Los Angeles.
Smith, E. R., Los Angeles.
Mathis, E. N., Los Angeles.
McCarthy, D. S., Los Angeles.
Hitt, M., Los Angeles.
McCoy, T. J., Los Angeles.
Morrison, N. H., Los Angeles.
Taggart, C. F., Los Angeles.
Pahl, P. C. H., Los Angeles.
Pottenger, F. M., Los Angeles.
Swearingen, S. P., Pasadena.
Gochenauer, D., San Diego.
Edwards, W. A., Corona.
Corbin, F. E., Los Angeles.
Dial, E. A., San Luis Obispo.

CONNECTICUT.

Benedict, F. A., Seymour.
Brown, C. H., Waterbury.
Sperry, F. N., New Haven.

COLORADO.

Mayne, O. J., Como.
Gorsuch, J. C., Denver.
Ostrander, F. W., Idaho Springs.

DISTRICT OF COLUMBIA.

Miller, W. L., Washington.

FLORIDA.

McMillan, D. W., Pensacola.

GEORGIA.

Youmans, L. P. Swainsboro.

INDIANA.

Evans, E. B., Greencastle.
Jackson, F. G., Muncie.
Hollis, S., Hartford City.
Carter, W. J., Converse.
Faith, A. H., Washington.
McSherley, J. L., Sulphur Springs.
Potter, J. E., Milford.
Mueller, F. M., Lawrenceburg.
Sherman, W. C., Loogootee.
Welburn, J. Y., Evansville.
Metts, Fred, Ossian.
Held, H. W., Vincennes.
Calvin, W. D., Ft. Wayne.
Doerr, J. E., Mt. Vernon.
Holton, W. M., New Harmony.
Hall, H. M., Millersburg.
Davenport, W. H., Vincennes.
McDowell, M. M., Vincennes.
Reeves, E. W., Plymouth.

ILLINOIS.

Frick, A., Chicago.
Black, A. D., Chicago.
Wells, W. H., Monmouth.
Schirding, W. P., Palatine.
Johnson, C. B., Batavia.
Warbrick, J. C., Chicago.
Swenson, C. G., Chicago.
Clark, E. J., Winnebago.
Neiswanger, C. S., Chicago.
Humiston, C. E., Chicago.
Barker, L. F., Chicago.
Schmidt, F. W., Chicago.
Macauley, T. E., Gilberts.
Shastid, W. E., Pittsfield.
Miller, A. E. Metropolis City.
Schlernitzauer, Wm., Freeburg.
Healy, W., Chicago.

IDAHO.

Castle, H. A., Pocatello.

IOWA.

Hess, W. C., Bagley.
Skelley, W. F., Lost Nation.
Kessler, J. B., Iowa City.
Watson, S. H., Blairstown.

KENTUCKY.

Chandler, W. S., Mt. Olivet.
Richards, W. A., Morganfield.
Sage, E. O., Louisville.
Reed, J. A., Maysville.

KANSAS.

Manning, H. W., Eureka.
Oldham, Jas. E., Wichita.
Graves, A. C., Pittsburg.
Whinery, S. C., Kansas City.

LOUISIANA.

Jones, R. P., Clinton.
Hays, G. A. B., Jackson.

MARYLAND.

Cloggett, Sam'l, Petersville.
Perry, J. P., Clearspring.
Simmons, H. M., Baltimore.
Shannon, Geo. C., Baltimore.
Maxwell, W. S., Still Pond.

MASSACHUSETTS.

Bonney, C. A., Jr., New Bedford.
Kelleher, P. F., Cambridge.
Kearney, J. H., Fitchburg.
Hutchinson, C. M., Cambridge.

MAINE.

Jonah, W. E., Portland.

MONTANA.

Turner, C., Butte.
Spottswood, E. W., Missoula.
McIntyre, John, Butte.
Roberts, H. C., Great Falls.
Lindsey, Cliff, Billings.
Gunn, J. W., Butte.

MICHIGAN.

Wallace, J. J., Sparta.
Wight, W. G., Yale.
Croman, J. M., Mt. Clemens.
Noyes, G. L., Ann Arbor.
Marvin, H. M., Coloma.
Jenks, H. D., Detroit.
Jacklin, J., Saginaw.

MISSOURI.

Triplett, J. S., Harrisonville.
Latt, G. W., Westboro.
Athony, F. R., Maryville.
Frankenburger, J. M., Kansas City.
Marfit, J. C., St. Louis.

NEBRASKA.

Bicknell, G. H., Omaha.
Davies, R. A., Arlington.
Hay, J. T., Lincoln.
Mullins, C. L., Broken Bow.
Hamilton, A. G., Springfield.
Poska, Abraham, Lincoln.
Brash, G. H., Beatrice.
Sward, E. J. C., Oakland.
Hickok, H. S., Carleton.
Finley, H. L., Pawnee City.
Deardorf, B. M., Clatonia.
McKibbin, J. W., Adams.

NEW HAMPSHIRE.

Hazelton, G. W., Haverhill.
Staples, J. W., Franklin Falls.
Walker, C. S., Concord.
Towle, F. S., Portsmouth.

NEW JERSEY.

Wickham, A., Newark.
McNamara, T. C., Hoboken.
Whitehead, R. B., Elizabeth.
Steadman, W., Hoboken.
Shailer, S., Newark.
O'Donnell, J., Paterson.
McLaughlin, G., Jersey City.
Dunlap, Mary J., Vineland.
Morris, C., Newark.
Weigand, O. A., Jersey City.

NEW MEXICO.

Lane, B. E., Las Cruces.

NEW YORK.

Beach, Judson, Etna.
Biggam, W. H., Brooklyn.
Ayme, E. L., New York.
Morton, H. H., Brooklyn.
Curry, G. P. M., Mt. Kisco.

Sharp, E. A., Central Valley.
Cronson, R., New York City.
Hartley, F., New York City.
Weir, R. F., New York City.
Ayers, E. A., New York City.
Webster, David, New York City.
Chappell, W. F., New York City.
Foote, E. M., New York City.
Dolz, Wm., New York City.
MacKeen, A. L., New York City.
Wood, L. C., Poughkeepsie.
Little, W. E. E., Bloomington.
Lyle, Alex., New York City.
Abbe, Robt., New York City.
Bernard Sachs, New York City.
Kinnicott, F. P., New York City.
Rupp, Adolph, New York City.
Sherman, A. L., New York City.
Pollitzer, Sigmund, New York City.
Ladinski, L. J., New York City.
Keller, F. C., New York City.

NORTH CAROLINA.

McKee, Jas., Raleigh.

NORTH DAKOTA.

Henning, J. D., Fargo.
Brimi, C. L., Cooperstown.

OHIO.

Jones, J. A., Cleveland.
Courtright, F. E., Shawtown.
Ballard, C. B., Marietta.
Tucker, W. H., Glen Karn.
Weaver, W. P., Miamisburg.

OKLAHOMA.

Dicken, W. E., Oklahoma.
Jordan, J. E., Stella.
Share, A. L., Kingfisher.
Chandler, H. S., Woodward.
Salmon, W. T., Oklahoma City.

OREGON.

Dickson, J. F., Portland.
McGavin, J. M., Portland.
Tucker, E. F., Portland.
Shane, L. A., Portland.
Jones, Wm., Portland.
Johnson, E. D., Portland.

PENNSYLVANIA.

McLean, J. D., Philadelphia.
Rainear, A. R., Philadelphia.
Grover, J. B., Peckville.
Smyser, H. David, York.
Free, G. B. M., Danville.
Hamilton, W. T., Philadelphia.
Evans, D. W., Scranton.
Wilkins, J. W., Philadelphia.
Willson, R. N., Philadelphia.
Wade, F. H., Allegheny.

SOUTH DAKOTA.

Merager, O. S., Sioux Falls.
Bliss, G. W., Valley Spring.
Thompson, J. R., Northville.
Arnold, D. E., Hecla.
Pickering, L. A., Warner.
Olney, S., Sioux Falls.

TENNESSEE.

Preston, J. H., Humboldt.
Smith, S. B., Nashville.

TEXAS.

Weems, M. L., Brazonia.
Burrows, H. A., New Boston.
Gibson, B. F., Midway.
McCobb, G. W., Gonzales.

VERMONT.

Lewis, H. E., Burlington.

VIRGINIA.

Saunders, C. A., Norfolk.
Baughman, Green, Richmond.
Hallar, J. P., Pocahontas.
Smith, H., Norfolk.
Royster, L. T., Norfolk.
Detwiler, E. L., Herndon.
Williams, E. G., Richmond.
Gwathoney, Norfolk.
Kennan, B. R., Norfolk.

WASHINGTON.

Miller, F. C., Tacoma.
Ingham, G. W., Olympia.
Carroll, F. M., Seattle.
Baker, N. M., Spokane.
Gray, G. A., Spokane.
Smith, Harvey, Spokane.
Loughlen, O. W., Tacoma.
Peterkin, G. S., Seattle.
Gunn, T. B., N. Yakima.
Overmeyer, G. W., Aberdeen.
Ludlow, W. L., Seattle.
McCready, N. S., Snowhomish.
Compton, H. A., Fairhaven.
Birney, H. J., Whatcom.
Powell, J. M., Spokane.
Ford, C. B., Seattle.
Chalmers, J. M. P., Vancouver.
Markley, L. R., Whatcom.

WISCONSIN.

Morse, A. J., Fond du Lac.
Gray, A. W., Milwaukee.
Stalker, H. J., Kenosha.
Bertrand, J. H., De Forest.
Manchester, B. E., Armstrong Creek.
Chanon, T. A., Rice Lake.

WYOMING.

Carton, Jas., Carbon.

Married.

U. TOPE, M.D., to Miss Annie Talcott, both of Scio, Ohio, January 22.

AMBRIS C. PICKETT, M.D., to Miss Lucy Sanders, both of Woodlawn, Mo., January 26.

LINUS WARD KLINE, M.D., to Miss Fannie Talbot Littleton, at Suffolk, Va., January 23.

MIDDLETON L. PERRY, M.D., to Miss Janie Wimberly, both of Milledgeville, Ga., January 19.

WALTER B. STEWART, M.D., to Miss Gertrude Louise Sawyer, both of Joliet, Ill., January 22.

ANDREW B. EATON, M.D., Eaton's Cross Roads, Tenn., to Miss Mae Bull, of Kingston, Tenn., January 8.

CHARLES D. MCGETTIGAN, M.D., Captain and Assistant Surgeon, N. G. C., San Francisco, to Miss Francesca C. Vallejo, daughter of Dr. Peaton Vallejo and grand-daughter of General Vallejo, at San Francisco, January 22.

Deaths and Obituaries.

Charles H. Burnett, M.D. University of Pennsylvania, 1867, died at his home in Bryn Mawr, near Philadelphia, January 31, aged 60. After his graduation he served one year as interne in the Episcopal Hospital and then studied abroad for two years, devoting his attention especially to otology. On his return he commenced practice in Philadelphia, making a specialty of diseases of the ear, and in this department soon took a leading position. His contributions to otologic literature have been numerous and valuable, chief among them are "A System of Diseases of the Ear, Nose and Throat," "Diseases and Injuries of the Ear," and "On the Ear." He was a member of the American Otological Association, the Philadelphia College of Physicians, Philadelphia County Medical Society and the Philadelphia Pathological Society. He was founder of the Philadelphia Infirmary for Diseases of the Ear, of which he was also chief of staff, and was also aurist to the Presbyterian Hospital.

Robert B. Grimes, M.D. Washington University, St. Louis, 1869, died from apoplexy, January 27, aged 58. "Fighting Bob, the Doctor," as he was known, served throughout the War of the Rebellion, and was discharged as lieutenant. After his graduation in medicine he entered the medical department of the Army, and was honorably mentioned for bravery in the dispatches. He was a member of the Thornburg expedition that went to the relief of the White River agency in September, 1881, and was one of the few that survived. When Thornburg and his party were attacked, Dr. Grimes, as chief surgeon of the expedition, not only attended the wounded, but found time to make coffins, to assist in the burial of the dead, to throw up breastworks, to bring water to the soldiers in the pits and occasionally take a shot at a redskin himself. Though dangerously wounded, he continued on duty for days till the survivors were rescued.

Dominick G. Bodkin, M.D. New York University, 1866, died at his home in Brooklyn, January 26, after a long illness from gastric ulcer, aged 68. While a medical student he volunteered for service in the Civil war, and was placed in charge of the smallpox and fever hospitals at Dauphin Island and Fort Gaines. He lived and practiced in Brooklyn from 1866. He was a member of the American Medical Association, New York State Medical Association, Kings County Medical Society and Long Island Medical Association. For many years he was chief of staff of St. Mary's Hospital. He was a delegate to the International Medical Congress of Moscow in 1897.

S. Seabury Jones, M.D. New York University, 1869, who studied in Edinburgh and Berlin and practiced thereafter in New York City, died at his home, January 21, from pneumonia, after an illness of three days, aged 55. He was a member of the Academy of Medicine, the Manhattan Medical and Surgical Society, and the Lenox Society, and was consulting physician at the workhouse and the almshouse.

Francis Clemens, Jr., M.D. University of Pennsylvania, Philadelphia, 1899, a practitioner of Paoli, Pa., was drowned while attempting to cross a flooded stream in Willistown township, January 22. He was returning from a professional call. His brother-in-law, Mr. George Davis, a senior student in the Medico-Chirurgical College, Philadelphia, was also swept down the stream, but was rescued.

Harry G. Willson, M.D. University of Pennsylvania, Philadelphia, 1895, of Laporte, Pa., died, after a long illness, at the residence of his parents in Warrensville, January 21, aged 32. He was a member of the American Medical Association and of the Lycoming County Medical Society. The latter Society, at a special meeting held January 22, at Williamsport, adopted resolutions of sympathy.

Agnes M. Gardiner, M.D. Woman's Medical College, Philadelphia, 1899, a member of the staff of the Toledo State Hospital, and a daughter of Dr. William G. Gardiner, was found dead in bed, January 25. The cause of death is stated to be apoplexy. Dr. Gardiner was 23 years old, and was a member of the American Medical Association.

Charles G. Sproull, M.D. New York University, 1893, afterward an interne in Bellevue Hospital, a practitioner of New York City and one of the incorporators of the Skene Hospital for Self-Supporting Women, died at the private hospital of Dr. W. T. Bull, where he had been operated on for appendicitis, January 24, aged 34.

Ora S. Pease, M.D. Dartmouth Medical College, Hanover, N. H., 1880, a well-known practitioner of Penobscot County, Me., and a resident of Old Town, died at the City Hospital, Old Town, January 18, as the result of a fall three weeks previously, aged 55. He was one of the founders of the Old Town City Hospital.

William Hannibal McClure, M.D. Atlanta (Ga.) Medical College, 1875, who served as member of the legislature and as state senator in Georgia and moved to Westminster, S. C., in 1895, died at his home in that city, January 19, from Bright's disease, after a long illness, aged 52.

Andrew J. Hines, M.D. Jefferson Medical College, Philadelphia, 1853, the oldest practitioner in Doylestown, Pa., and a prominent member of the Bucks County Medical Society, died

his residence, January 21, from kidney disease, after a prolonged illness, aged 76.

Benjamin D. Blackstone, M.D. Western Reserve University, Cleveland, 1848, a resident and practitioner of Martinsville, Ind., for more than half a century, died at his home in that city, January 23, after a long illness, aged 77.

H. U. Umstad, M.D. Jefferson Medical College, Philadelphia, 1851, the oldest practitioner in Chester County, Pa., died at his home in Phoenixville, January 26, from Bright's disease, after an illness of one year, aged 75.

John H. Harley, M.D. University of Maryland, Baltimore, 1857, who had practiced medicine at Dewart, Northumberland County, Pa., for more than forty years, died January 14, at his home, from pneumonia, aged 75.

Lachlan Tyler, M.D. Columbia University, New York, 1876, who had been connected with the New York Board of Health for several years, died shortly after an operation for appendicitis, January 27, aged 50.

F. J. Spilman, M.D. Medical College of Ohio, Cincinnati, 1858, who had practiced medicine for nearly half a century at Andersonville, Ind., died at his home in that place, January 23, from jaundice, aged 70.

Edmund R. Hebrank, M.D. University of Maryland, Baltimore, 1889, one of the best-known physicians of Westmoreland County, Pa., died at his home in Adamsburg, January 23, from consumption, aged 48.

George H. Stone, M.D. Albany (N. Y.) Medical College, 1898, a practitioner of Forestdale, Vt., died in Albany, N. Y., January 23, from tuberculosis, after an illness of four months, aged 28.

John A. Northrup, M.D. Geneva (N. Y.) Medical College, 1866, a practitioner and postmaster of Dover, Okla., died at his home in that place, January 17, after a prolonged illness.

Joseph Morris, M.D. University of Michigan, Ann Arbor, 1861, an esteemed practitioner of Columbus Grove, Ohio, died at his residence, January 24, from pneumonia, aged 63.

Benjamin Franklin Pope, M.D. University of Nashville, Tenn., a prominent citizen of DuQuoin, Ill., died January 24, at his home, after an illness of two years, aged 76.

George W. Bellus, M.D. Rush Medical College, Chicago, 1878, one of the pioneer physicians of Taylor County, Iowa, died at his home in Blockton, January 12, aged 65.

William R. Wells, M.D. Harvard University, 1834, the oldest practitioner in Sonoma County, Cal., died at his home in Petaluma, January 24, aged 88.

Nathan M. Babad, M.D. Columbia University, New York, died from consumption at the Good Samaritan Hospital, Los Angeles, January 21, aged 29.

John Wesley Martin, M.D., the oldest physician of Brookhaven, Miss., died January 25, after a month's illness, aged 81.

D. M. Anderson, M.D., an old resident of Texas, died at his home in Brownwood, January 23, aged 71.

State Boards of Registration.

District of Columbia Examination.—The regular quarterly examination for license was held January 9 to 13 at Washington. The number of subjects examined in were 15; number of written questions, 80, with additional oral examination. Total number of candidates was 12, of whom 8 passed.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per-cent.
		PASSED.		
287	R.	Columbian University	1900	78.16
288	R.	Columbian University	1901	81.62
293	R.	Northwestern University	1891	82.41
281	R.	Starling Med. Coll., Columbus.....	1893	85.44
291	R.	University of Georgetown.....	1900	81.59
285	R.	University of Georgetown.....	1901	84.81
289	R.	University of Virginia.....	1900	80.84
290[1]	R.	National University, Washington..	1901	75.25
		FAILED.		
286	H.	Cleveland Medical College	1892	40.35
282[2]	R.	National University, Washington..	1901	66.97
283[3]	R.	University of the South.....	1899	64.12
284[4]	R.	University of the South.....	1901	72.16

1. Third examination.
2. Second examination.
3. Fourth examination.

Delaware Examiners Appointed.—The following physicians have been appointed by Governor Hunn to the State Board of Medical Examiners: Dr. Edwin S. Anderson (H.), Dover; Dr. Francis L. Springer, Newport (R.); Dr. A. E. Frantz (H.), Wilmington; Dr. E. W. Cooper, Camden (R.). The appointment is for two years.

Miscellany.

Potassium Permanganate in Dysentery.—Kuzmitzky reports very favorable results from the treatment of dysentery with rectal injections of a 1 to 4000 tepid solution of potassium permanganate, twice a day.—*Woenno-Med. Journal*, for November.

Equine Morality!—An Eastern weekly contemporary notices a recent febrile disease affecting horses in the Island of Luzon and "resulting in a great morality." If that is all it might not be an ill chance should it affect some of the human inhabitants there also. The government laboratories could possibly find a mitigated form valid against faith-breaking, etc., to inoculate the biped Tulisanes and insurgent prisoners with and thus insure their better behavior.

Consolidation of Cleveland Medical Journals.—An event significant of the tendencies of the time has just occurred in Cleveland. Plans for the amalgamation of the *Cleveland Journal of Medicine* and the *Cleveland Medical Gazette* have been brought to a successful issue. On January 20, 1902, was held the organization meeting of the *Cleveland Medical Journal* Company, which is composed of those physicians now interested in the two old journals, together with a good proportion of the representative physicians of Cleveland, numbering in all 45 stockholders. At a considerable sacrifice on the part of many, the two old journals have been transferred in their entirety to the new company that will publish the new journal, which is to be an independent and free professional institution conducted for the good of the medical community, with no idea upon the part of the stockholders that they shall ever look for dividends. At this meeting a temporary organization was formed, consisting of Dr. Marcus Rosenwasser, president; Dr. William E. Bruner, secretary; Dr. Joseph F. Hobson, treasurer. Dr. P. Maxwell Foshay was elected editor, and Dr. Edward S. Lauder, associate editor.

The American Medical Association.—The following circular letter has been issued by John A. Wyeth, M.D., president of the American Medical Association: Every practitioner who believes it necessary and wise to safeguard the material interests of the medical profession, to foster the growth and diffusion of medical knowledge, to promote friendly intercourse among American physicians, to elevate the standard of medical education, to secure the enactment and enforcement of medical laws, to enlighten and direct public opinion in regard to the problems of State medicine, and to represent to the world the practical accomplishments of scientific medicine, and who accepts the most important lesson of human experience that without organization controlled by judicious discipline there can be no coöperation between large groups of men, and no satisfactory or successful outcome to their labors, should either join, or lend his influence to, the American Medical Association, the one great aim of which to is federate into one compact organization the medical profession of the United States. He should join it in preference to any sectional medical association, because it is the *only representative national organization of the profession in the Union.* It has representative societies in every State and Territory of the United States. Its comprehensive scheme embraces the formation in every county of a medical society, with a uniform constitution and by-laws, each of which shall belong to the State association, organized and governed with equal uniformity, and all a part of the national body. In the reorganization at St. Paul in 1901, the question of eligibility to membership in this vast body was referred directly to the primary or county societies. "No person not a member of his local affiliated medical society, provided there be one, shall be eligible to membership, or be allowed to continue as a member in the Association." This ruling dropped temporarily a considerable number who had

long been on the roster as permanent members from State or local bodies which, by the by-laws then existing, made them eligible. While this action may, at first glance, seem unnecessarily severe or even unjust to those older members (among whom are many of the most loyal and faithful supporters of the national body), reflection must convince them that not only should they yield to the opinion of the majority, but approve the wisdom of this policy. In no other way could the exclusion of unworthy persons be secured than by having those who are intimately acquainted with the moral character and professional standing of the applicant pass upon his merits. No other organization can compare with the American Medical Association as a working machine, capable of carrying to successful completion the great work of uniting the medical profession. Its officers are men long trained in a work which requires not only experience but tact and business ability. It owns not only a surplus fund, which enables it to move with strength and confidence in the accomplishment of its purpose, but it has as its most active agent a weekly medical periodical, THE JOURNAL of the American Medical Association, which has a larger circulation than any similar periodical in the world. It maintains a National Committee on Medical Legislation, located in Washington City, and in this central committee every State and Territory in the United States has its membership. The State and county legislative sub-committees, reaching to all the Congressional districts and in touch with the affairs of the State, can not fail to wield a powerful influence in all affairs connected with medical legislation. To direct legislation in all matters pertaining to the public health, to inter-continental, insular and interstate quarantine, as well as to maintain and to further improve the laws relating to the practice of medicine, and to the requirements of medical education is the prerogative of the medical profession. It is the plain duty of all to help in bringing about this "consummation devoutly to be wished" by joining the American Medical Association.

Societies.

Yakima County (Wash.) Medical Association.—At the annual meeting of this Association in North Yakima, January 11, Dr. Thomas B. Gunn was elected president; Dr. B. A. Owens, Adair, vice-president, and Dr. David Rosser, secretary.

Wapello County (Iowa) Medical Society.—The annual meeting of this Society was held at Ottumwa, January 7. Dr. Benjamin W. Searle, Ottumwa, was elected president; Mark D. Pascoe, Ottumwa, vice-president, and Dr. Emma S. Powell, secretary-treasurer.

Will County (Ill.) Medical Association.—The annual business meeting of this organization was held at Joliet, January 14. Dr. Thomas H. Wagner, Joliet, was elected president; Dr. Watson H. Curtis, Wilmington, vice-president, and Dr. H. S. Worthley, Joliet, secretary-treasurer.

Lorain County (Ohio) Medical Society.—At a recent meeting of the Society the following officers were elected: President, Dr. Washington Foster, North Amherst; vice-president. Dr. Olney B. Monosmith, Lorain; secretary, Dr. C. F. Gilmore, Lorain, and treasurer, Dr. Frank Young, Lorain.

Clark County (Ky.) Medical Society.—At the annual meeting of this Society in Winchester, January 11, Dr. Nelson V. Prewitt, Winchester, was elected president; Dr. C. G. Stephenson, vice-president; Dr. Isaac A. Shirley, Winchester, secretary, and Dr. John A. Snowden, Wade's Mill, treasurer.

Litchfield County (Conn.) Medical Association.—At the quarterly meeting of this body held at Torrington, January 14, a banquet was given by the local members. Dr. John C. Kendall, Norfolk, was elected president; Dr. Jerome S. Bissell, Torrington, vice-president, and Dr. A. E. Cobb, Falls Village, clerk.

Central Texas Medical Association.—This Society met at Belton, January 14 and 15. Dr. Frank D. Thompson, Fort Worth, was elected president; Dr. M. P. McElhannon, Belton, vice-president, and Dr. William R. Thompson, Fort Worth, secretary and treasurer. The next meeting will be held at Waco.

Winona County (Minn.) Medical Society.—The annual meeting of this Society was held in Winona, January 7. The following officers were elected: Dr. Charles A. Boyd, Lewiston, president; Dr. Leland H. Munger, Winona, and Dr. Lyne[illegible] vice-presidents; Dr. James B. McGaughey, Winona, secretary, and George J. Tweedy, Winona, treasurer.

York County (Maine) Medical Society.—The eighth annual meeting of this Society was held in Biddeford, January [illegible]. The election of officers resulted as follows: Dr. Henry I. Durgin, South Eliot, president; Drs. Charles W. Blagden, Sanford, and Jesse D. Haley, Saco, vice-presidents; Dr. Lawrence E. Willard, Saco, secretary, and Dr. J. Starr Barker, Kennebunk, treasurer.

Dutchess County (N. Y.) Medical Association.—The first annual meeting of this Association was held at Vassar Hospital, Poughkeepsie, January 8. Dr. Irving D. LeRoy, Pleasant Valley, was re-elected president; Dr. Henry E. Allison, Fishkill Landing, secretary, and Dr. Louis C. Wood, Poughkeepsie, treasurer. The dates of the semi-annual meetings were changed to the fourth Wednesday in April and October.

Columbia County (N. Y.) Medical Association.—At the first annual meeting of this Association, held in Hudson, January 14, Dr. Thomas Wilson, Hudson, was re-elected president; Dr. H. Lyle Smith, Hudson, vice-president; Dr. O. Howard Bradley, Hudson, secretary and treasurer; Dr. Crawford F. Fritts, Hudson, delegate to the New York State Medical Association, and Dr. T. Floyd Woodworth, Kinderhook, alternate.

Warren County (N. Y.) Medical Association.—The annual meeting of this Association was held in Glens Falls, January 8. Dr. David J. Fitzgerald, Glens Falls, was elected president; Dr. Daniel B. Howard, Warrensburg, vice-president; Dr. Fred G. Fielding, Glens Falls, secretary and treasurer, and member of nominating committee for State Association, and Dr. William J. Hunt, Glens Falls, fellow of the State Association.

Medical Society of the District of Columbia.—At a recent meeting of this Society the following officers were elected to serve during present year: President, Dr. Samuel S. Adams, Washington; vice-presidents, Drs. John W. Chappell, Tennallytown, and Aurelius R. Shands, Washington; treasurer, Dr. Charles W. Franzoni, Washington; corresponding secretary, Dr. Thomas C. Smith, Washington; recording secretary, Dr. Francis P. Morgan, Washington, and librarian, Dr. Edwin L. Morgan, Washington.

Atchison County (Mo.) Medical Association.—The physicians of Atchison County met on January 7 at Rock Port, organized the above association and adopted a constitution. Meetings are to be held quarterly—the next one on April 2 at Fairfax. Of the twenty odd physicians in the county, fourteen were present. The president is Dr. J. A. Postlewait, of Tarkio, the secretary, Dr. Austin McMichael, of Rock Port, and the treasurer, Dr. Hunter, of Fairfax. At this meeting Dr. E. E. Richards, of Tarkio, read a paper on "Pneumonia," emphasizing especially streptococcus pneumonia. Dr. G. W. Lott read a paper on "Diphtheria." In this connection Dr. Holliday, of Tarkio, maintained the non-identity of diphtheria and membranous croup, and Dr. Ladd, of Westboro, the non-specificity of antitoxin. Both these positions were contested by Dr. J. L. Small, of Fairfax.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Ninety-sixth Annual Meeting, Held in Albany, Jan. 28-30, 1902.

The President, Dr. Henry L. Elsner, of Syracuse, in the Chair.

FIRST DAY—TUESDAY, JANUARY 28.

Inaugural Address.

DR. HENRY L. ELSNER, of Syracuse, delivered this address, and, according to custom, made certain recommendations, which were then referred to a committee for consideration and report. He pointed out the danger of accepting unreservedly the views recently promulgated by Koch regarding the question of the communicability of bovine tuberculosis to human beings. He also recommended that the Society take an active interest in the furtherance of the project to establish a national bureau of health. The semi-annual meeting of the Society, held last October in New York City, as an experiment having proved so successful, Dr. Elsner suggested that the officers consider the advisability of holding such a meeting this year in some other city than Albany, preferably in Buffalo. A significant feature of the address was the speaker's declara-

tion that the delegate system of the State Society should be abolished.

Proposed Union of the Two State Organizations.

DR. ELSNER then considered the proposition to unite the medical profession of the Empire State in one harmonious organization. He introduced the subject with the assertion that the American Medical Association had been practically reorganized on a broad and liberal basis, and that the old code of ethics quarrel was a dead issue. He was confident that the desired unification of the profession in New York State could be effected with dignity and without the sacrifice of principles. Readers of THE JOURNAL are already familiar with the overtures made by the Medical Society of the County of New York to the New York County Medical Association, and the cordial way in which they were received by the latter body, although their charter made it necessary to refer such a question to the State Association. But these occurrences were but the heralds of the dawn, and many in the profession have been waiting impatiently for the full light of day—for action rather than mere expression of opinion. On this point Dr. Elsner said: "I recommend that the Medical Society of the State of New York appoint a committee of five to confer with an equal number representing the New York State Medical Association for the purpose of formulating a plan which shall have for its object the reorganization of the regular profession, which body shall be in affiliation with the American Medical Association, and that the committee report the result of its labors at the next meeting of the Medical Society of the State of New York. In the event of the failure of the New York State Medical Association to appoint such a committee, or if the committees should fail to agree upon a plan of reorganization, the committee appointed by the Medical Society of the State of New York shall have full power, if it deems it expedient, to represent the Society before the American Medical Association, and the Secretary of this Society shall, if the majority of the committee desires, provide the individual members with credentials of delegates to the American Medical Association. The method of election or appointment of the committee representing this Society shall be decided by the committee to which the president's inaugural address shall be referred, and shall be ratified, as are all recommendations, by a vote of the Society." It should be added that this committee gave this recommendation its unqualified approval, and the Society accepted the suggestion that Dr. Henry L. Elsner be made the chairman of the committee of conference with power to select as his associates four representative members of the Society. These appointments will be made in a few days, and the New York State Medical Association will then be officially notified of the action taken.

Goiter—Its Medical and Surgical Treatment.

DR. THOMAS P. SCULLY, Rome, presented a paper with this title, based on a personal experience with 47 cases. He advocated treatment of parenchymatous goiters by injecting into them a mixture of equal parts of tincture of iodin and a 5 per cent. solution of carbolic acid, using from 10 to 30 minims at a time, and making the injection once a week in a different spot. Galvano-puncture was also useful. Cystic goiters should be treated surgically, the mortality being quite low, only 1 per cent. in 2000 cases treated by Professor Kocher.

What Shall Be Done with the Professional Midwife?

DR. M. J. LEWI, of New York, presented a paper on this subject, in which he pointed out the large number of midwives regularly practicing in a large city like New York, and the many evils resulting from allowing ignorant women to act in such a capacity. It was suggested that the Committee on Legislation should draft a bill with the hope that the legislature could be prevailed upon to enact a law which would serve to restrict, though not abolish, the midwife. The committee was then directed by special resolution to endeavor to carry out the views expressed in the paper and by those who discussed it.

Human Asymmetry.

DR. W. S. ELY, Rochester, pointed out many points of asymmetry, such as inequalities in the length and circumference of the lower extremities, unequal power in the two eyes and the two ears, the lack of symmetry in the lungs, the kidneys and even the heart itself. The recognition of these facts were shown to have a practical value, as for example, in making deductions from the results of physical examination.

Sarcoma of the Tonsil.

DR. ARTHUR G. ROOT, Albany, reported this case, occurring in a man of 23, and necessitating lateral pharyngotomy.

Treatment of Pelvic Suppuration.

DR. CHARLES P. NOBLE, Philadelphia, presented a paper on this subject, based upon 200 cases. He showed that the mortality had fallen from 16.3 per cent. in the earlier cases to 4.8 per cent. in the later ones. Most of the latter had been treated by incision through the vault of the vagina.

The Sideroscope.

DR. THOMAS R. POOLEY, New York City, exhibited the improved instrument of Hirschberg, and said that he was the first to employ the magnetic needle for detecting the presence of particles of iron and steel in the eye. His first paper on this subject had been presented in 1880 to the Section on Ophthalmology of the American Medical Association. It is similar in construction to the reflecting galvanometer, a magnet, with a mirror attached, being suspended by a fiber of silk. The reflected light falls on a scale, and the deviation of this spot of light from the zero mark points to the presence of a piece of iron or steel in proximity to the magnet.

Gonorrhea of the Prostate.

DR. JOHN VANDER POEL, New York City, was the author of this paper. He said that in 190 dispensary and private cases this affection of the prostate was present in 39.7 per cent. An exploration of the rectum and an examination of the fluid removed by massage should be made in order to establish the diagnosis of gonorrhea of the prostate. By the proper use of the modern gonococcidal remedies, such as protargol, the number of cases of prostatitis could be diminished. The treatment should be begun, if possible, within the first day or two. The anterior urethra is first washed out with a 0.25 to 0.5 per cent. solution of protargol, and then the protargol solution is injected directly into the bladder, using from 200 to 400 grams. This irrigation was best given with the patient recumbent.

Fractures of the Nose.

DR. JOHN O. ROE, Rochester, presented this paper. He said that the bones should be placed in good position by the introduction of a smooth sound aided by the finger externally. The nose should then be covered with a strip of adhesive plaster, and over this should be fitted a mold of aluminum or copper, and held in place by a broad strip of adhesive plaster, The internal support should consist of a spring covered with rubber, or a packing of cotton or gauze. This dressing should not be applied so as to cause pain.

DR. LEONARD WEBER, New York City, spoke of two bad cases in which he had succeeded well by the insertion of two large rubber tubes.

DR. WENDELL C. PHILLIPS, New York City, emphasized the need for all having the care of children to be informed as to the importance of carefully attending to even apparently slight injuries of the nose in these little ones. He could not agree with Dr. Roe that the external support was so much more important than the internal splint.

(To be continued.)

CHICAGO MEDICAL SOCIETY.

Regular Meeting, held Dec. 11, 1901.

The President, Dr. C. Fenger, in the Chair.

The Conservative Treatment of Appendicitis and Fallacy of the Starvation Cure.

DR. J. H. CARSTENS, Detroit, read the above paper by invitation. He cited a case which was brought to the Harper Hospital about fifty or sixty hours after the so-called starvation method had been thoroughly tried. Patient was in collapse, almost

pulseless, and in fifteen minutes she was dead. Postmortem examination revealed a gangrenous appendix, with gangrene of the cecum around the seat of the appendix for about half an inch, with perforation. It had been walled in, but had ruptured with resulting acute sepsis. He reported two similar cases to illustrate the fallacy of the so-called starvation plan, and then called attention to the death record of the city of Detroit last year. He found 37 cases recorded as having died from appendicitis; 54 were put down as peritonitis. The death records of these 37 patients were signed by nineteen different physicians. He thought by inquiring of them he might be able to arrive at some conclusions. He received answers from twelve, who reported on 25 deaths. Fourteen of these had been subjected to operation, and 11 others died without operation. He asked these same practitioners to give the number of cases they had had during the year, and how many had died with or without operation. He received reports of 213 cases of appendicitis, of which 160 were operated during the acute attack or during the interval, in short, at any time when the surgeon thought it was proper. Of this number, 14 died. The list of surgical cases included naturally the reports of the principal surgeons, and gave a death rate of about 8 per cent., counting everything—easy interval cases, purulent peritonitis, and those actually moribund. The number of cases treated medically were 57, with 11 deaths, giving a mortality of over 20 per cent. From the reports of the physicians, in nearly every case operation had been urged, but refused by the parents of the patients, or by the patients themselves. The essayist said that he was continually hearing about the "starvation treatment" and what wonderful results are claimed for it. He thinks that it is good treatment in all kinds of bowel trouble, typhoid fever, and even appendicitis where an operation can not be done; but he emphatically protests against the starvation plan of treatment as advocated with the idea of the patient getting over the attack and then being operated on during the interval of quietude.

To sum up, the author stated that the conservative treatment of appendicitis consists in prompt operation; and that the starvation method of procrastination is vicious, and has cost many lives, because it is used as an excuse to dally with patients that should be promptly subjected to removal of the organ.

DR. WILLIAM J. MAYO, Rochester, Minn., wished he could have convictions on the subject of appendicitis that were as clear as those of the essayist. He regretted that this is not so. Unfortunately, patients do not consult the surgeon sufficiently early to be operated within the first twenty-four or forty-eight hours. He could not agree with the essayist that every case was an early one from the time the patient was seen. If a patient has been sick for five or six days, is bloated, has not been able to get a movement of the bowels, is vomiting, he knows there is considerable mortality in operating upon that class of cases at that time, and that many of them can be gotten into a more favorable condition. It could be safely said that patients who are operated upon early will nearly all get well; patients operated on at the end of the first week will nearly all get well. It is the intermediate class of cases that gives the mortality.

DR. CHRISTIAN FFNGER briefly reviewed the early history of appendicitis. He believes the majority of surgeons will agree with him in saying that the severe cases should be operated on at sight. There is undoubtedly a general peritonitis existing in these, and the earlier operation is done, the better. As to the medium-severe cases, the surgeon should think, think, think, and select. It was difficult many times to do this. There must be a selection of cases, because the majority of the medium-severe cases get well without operation. He mentioned a class of cases that were half pathological and half clinical. In these the abscess was usually so located that it could be emptied through the rectum or vagina instead of waiting twenty-four hours for the subsidence of the acute symptoms.

DR. JOHN B. MURPHY mentioned the statistics of the Health Department of Chicago, saying that in 1895 there were 106 fatal cases of appendicitis; in 1896, 158; in 1897, 141; in 1898, 174; in 1899, 251; in 1900, 233; 1901 (nine months), 203 cases. He believes that the intelligence of the medical profession is far in advance of those statistics, while its practice is just what the record shows—it is not at all up to its intelligence. The question of medical or surgical treatment resolved itself into the relation of pathology to symptoms; and the relation of symptoms and pathology to time. The cases that come to the surgeon are pus cases. The profession errs in allowing patients to reach the stage of formation of pus. The diagnosis can and is made by the majority of practitioners early; by some it is made with sufficient courage to act. He believes in operating in the early stage of the disease, and by this he means inside of the first thirty-six hours, better inside of the first twenty-four hours, and there is no good reason for waiting longer.

DR. A. J. OCHSNER said that the cases reported by Dr. Carstens were improperly treated by the general practitioners. Of several hundred cases treated by him, they did not need, as a rule, more than one hypodermic injection, and not three or four hypodermic injections as mentioned by the essayist. This number of injections meant that the patients received either cathartics or food, and this in turn caused the pain. If no cathartics or food had been given, the pain would have subsided in twenty-four hours. Surgeons should operate on these cases, if possible, before the infectious material has passed out of the appendix; but in his experience the number that come under his care before this has happened is approximately 5 per cent., and in the other cases the infectious material has already passed beyond the vermiform appendix. So long as the infectious material is confined within the vermiform appendix, in any case of appendicitis, it is wise to operate, because such patients will almost invariably get well. It is not because he is afraid of operating that he selects the so-called starvation method of treatment, but it is because his mortality has only been one-fourth as high as it was before he resorted to it. Out of 198 cases in which he demonstrated a perforation at the operation, either on account of a stone or gangrene, he has had a mortality of only 9, less than 5 per cent. In every case that comes under his care within the first thirty-six hours, he invariably advises an operation. If this advice is not accepted, he is certain that there will be a mortality of almost nothing in patients who are not fed.

DR. ARTHUR D. BEVAN said that the subject had not been discussed in a judicial manner by the essayist. If he understood him, the essayist urges operation upon all cases, no matter when the patient is seen; while another speaker advocated that no case of appendicitis should be operated on except it could be demonstrated that the lesion is confined within the caliber of the appendix. Very few surgeons could demonstrate that point. The judicial remarks of Dr. Fenger, as well as the discussions of Keen and other men, would in time be generally accepted; that the mild cases should be handled in a rational, scientific way—no catharsis, cleaning out the stomach, giving opium to prevent peristalsis; that the severer cases should be operated at once; that the middle-ground cases should be dealt with in the manner indicated by Dr. Fenger.

DR. L. L. MCARTHUR stated that Dr. Bevan had expressed his own position in the matter very clearly. He made a plea for those cases that are considered moribund at the time they are seen by the surgeon, and apparently were utterly hopeless. He knew it is getting to be the practice of some surgeons to refuse to operate on this class of patients, permitting the general practitioner to shoulder the responsibility of the fatality himself. Even in such cases he believes a few of them can be saved, and of 72 cases that appeared to be moribund, in collapse, with peritonitis, he has opened in the median line, and has saved 19, but he had operated 17 consecutive times before he got one patient to live. He feels, therefore, that even in utterly and apparently hopeless cases something should be done for them.

DR. FERNAND HENROTIN had not reached the point where he could lay down rules for his guidance in cases of appendicitis. He took it for granted that very few surgeons operated on patients who were moribund. On the other hand, they did not

operate on patients who were practically well. If patients recovered from the acute stage and were then seen if operated in the interval, there was practically no danger. The important thing was to emphasize that appendicitis is a surgical disease. If the case can be seen early, when it is presumable that the infection is still confined within the appendix, nothing is more gratifying than when the appendix is removed. That class of patients usually recovered.

DR. E. WYLLYS ANDREWS stated that he knew from practical experience that the conservative treatment, including early washing out of the stomach and withholding of cathartics, is followed by death in many instances. He had a patient in whom he carried out this treatment rigorously; but the patient died between his evening and morning visit. He did not think there was any fault in the execution of the conservative technique. He cited a similar case that terminated fatally in his own practice, as well as cases in the practice of others. He knew of cases seen by Dr. Ochsner in consultation that have died without operation. He thought it was folly to permit the statement to go out that a large number of cases can be saved by conservative measures and contrast that method on the one hand with the results of operative treatment on the other.

DR. A. H. FERGUSON said that surgeons were all agreed that in the severe cases, where there is no doubt as to the diagnosis, and there is tumefaction, with all the other symptoms of acute inflammation of the appendix, the appendix ought to be removed as soon as possible. Statistics show that that is the best treatment. In a large percentage of cases, surgeons operated as soon as they could, whether the patients were apparently moribund or not, because they felt it a duty to the patients; they felt that they were not cowards if they gave patients the chance of an operation, even though that chance be very little. He had lost two patients who were operated on within forty-eight hours after the onset of the attack. So far as he could judge, he managed his cases after the method mentioned by Dr. Mayo, although he was prepared to operate more frequently upon the intermediate cases than he did formerly, because he felt that a patient would die now and then because he did not operate.

DR. D. W. GRAHAM said that he did not like to hear anyone lay down rules for the treatment of appendicitis. Every operator had his own method and made his own rules. In short, a surgeon would make a rule to-day and violate it to-morrow. He had been operating on the intermediate cases more frequently than he did formerly. He believed that more patients could be saved who would otherwise die by simply having regard for a general surgical principle, namely, the relief of surgical tension. All that some of these cases required was a simple incision and drainage for the time-being. The appendix could be removed at a subsequent operation, if deemed necessary.

DR. A. GOLDSPOHN had applied the method of Dr. Ochsner in three very mild cases. The symptoms were not marked, but the tenderness was positive. He had also had patients brought at once to the hospital so as to be able to do surgery at any moment, and then instituted the starvation treatment. Two of the three very mild cases that he thought would have recovered at home without almost any medical treatment, that had not been overfed, did very well, but the other case did not. This patient was operated on, and a recovery obtained, although he had a good deal more serious case to deal with than he would have had if he had operated twenty-four hours earlier.

DR. WILLIAM M. HARSHA said there was no question as to the treatment of severe cases at the start, if the surgeon saw them; but the surgeon saw the majority of the cases after two or three days. He had held for several years the view advocated mostly by Richardson, of Boston, that it was dangerous at this stage to operate on every case. He still thought so. He believed there were cases in which the treatment advocated by Dr. Ochsner was the very best that could be pursued. He maintained that every case should be operated on that was progressive at the end of thirty-six hours.

DR. A. I. BOUFFLEUR was inclined to follow the course outlined by Drs. Mayo and Bevan, with the general proposition that he would operate when in doubt. At the present time that was the most comforting position which he was able to occupy, and such being the case, he adopted it as the nearest thing to a rule that he could make.

DR. EDWARD H. LEE said there was one form of appendicitis that had not been mentioned, namely, that form of the disease designated as streptococcus infection, the infection taking place through the wall of the appendix without perforation. It could not be termed a general suppurative peritonitis; but postmortem examination would reveal distention of the entire intestinal tract, a hyperemic condition of the intestine without suppuration. The appendix might or might not show some gangrene. As a rule, it did not show any gangrene whatever. In these cases the symptoms were aggravated from the start; vomiting was persistent; there was no localized tenderness, so that it was very difficult to make an accurate diagnosis of appendicitis. These cases terminated fatally in twenty-four to forty-eight hours, and surgical or medical treatment would not be of any value whatever. However, these cases were very rare.

NORTH BRANCH OF THE PHILADELPHIA COUNTY MEDICAL SOCIETY.

Regular Meeting, held Jan. 16, 1902.

The President, Dr. A. M. Eaton, in the Chair.

Diagnostic Value of Digital Examination in Diseases of Rectum.

DR. H. A. BRAY dwelt at some length on the fact that the general practitioner treats diseases of the rectum too much from a symptomatic standpoint and without making a local examination of the part affected. Cases of this character usually present symptoms of extreme nervousness, melancholia, sometimes with suicidal intent, pain in the rectum, digestive disturbance, disorders of the liver, etc., and very often the case is treated for the most prominent of these symptoms without the real cause of the trouble being suspected. Several cases were cited in support of this theory; in one of them the patient had been treated by many physicians for constipation, the condition having existed many years. When he came under the author's observation a digital examination was made which revealed a stricture 2½ inches above the external sphincter muscle. In another case which was being treated symptomatically for constipation, local examination revealed carcinoma of the rectum situated 2 inches above the external sphincter muscle. The method of making the examination was given in detail and especial stress was laid upon the importance of examining the parts close to the anus, as well as those higher up in the bowel, and the opinion was expressed that practically all pathologic changes in this region except internal hemorrhoids can be detected in this manner.

Operative Treatment of Hemorrhoids.

DR. CHARLES F. NASSAU read this paper. The different methods of procedure in operating on this condition were fully discussed and the view expressed that the ideal method of operating is to treat the hemorrhoidal area in the same manner as you would treat a varicose condition in any part of the body, thus avoiding the pain produced from unhealed ulcerating surfaces, the result of sloughing away of ligatures or the granulating lines left by the clamp and cautery. As regards the use of escharotic injections they were considered as of no use in external piles and although producing considerable benefit in some cases of internal hemorrhoids, the dangers attendant upon their application were such as to overbalance their merits. Local infiltration anesthesia was recommended in suitable cases, although it was thought to increase the technical difficulties of the operation. In cases having comparatively small internal hemorrhoids, stretching of the sphincter ani and careful attention to the fissures, such as the application of the cautery, division of the base to healthy tissue or complete excision followed by careful suture were recommended. In minor cases of isolated external piles excision of the veins involved followed by careful suturing of the

skin wound was recommended. The Whitehead operation, while based upon correct grounds, was considered at fault in its technical details, and as it is also sometimes followed by stricture and even incontinence, it was not advised. For the more difficult cases the excision of the entire pile-bearing area followed by suturing was thought to be the most desirable procedure. This operation can be done either under local anesthesia or ether, according to the indications of the particular case. Considerable stress was laid upon the importance of general and personal hygiene following this treatment and especially should the patient be instructed to secure a daily action of the bowels.

Diagnosis and Treatment of Carcinoma of Rectum.

DR. GEORGE C. ROSS considered that there are five varieties of this condition: epithelioma, scirrhus, encephaloid, colloid, and melanotic carcinoma or sarcoma, the frequency of their occurrence being in the order named. The most common form of cancer of the rectum is the variety of epithelioma known as adenocarcinoma. The most rapidly fatal form is the sarcoma or melanotic carcinoma, which is also the most rare, only 11 cases of this variety being so far recorded. The importance of both digital and optical examination in all cases of local ailment of the rectum was emphasized and the author considers that in cases of doubt the administration of a local anesthetic, or even ether, if the case indicates, is not only permissible but demanded, when necessary, in order to secure a specimen of the growth for microscopic examination. Cancer more frequently occurs in old age, the percentage of cases increasing very rapidly after the age of 20. Attention was directed to the fact that the history of the case will often be of material aid in making a diagnosis of the condition, some of the most common symptoms being loss of weight and strength, cachexia, and difficult defecation, the stools containing bloody, mucous discharges.

Statistics regarding the immediate mortality rate were given and it was shown that about 20 to 30 per cent. of the cases are immediately fatal when radical measures are employed, the causes of death being peritonitis, shock and retroperitoneal infection, with resulting septicemia. There are very few reported cases where the patients have remained perfectly well for a period of four years, and the best authorities on this subject seem to give a very unfavorable prognosis. The two principal methods used for extirpation of the diseased rectum are Kraske's operation and its modifications, and one which is applicable in the female, using the route of the perineum to gain access to the bowel. This operation is claimed by those who have used it to be a very satisfactory one. In the cases where radical treatment is not indicated, either from the disease being too far advanced or for any other reason, colostomy is the only alternative, and this operation was also recommended in some instances as a preparatory measure in order to allow the patient to build up his strength before undertaking radical procedure.

DR. WILLIAM L. RODMAN, in discussion, stated that he considered too much stress could not be laid upon the importance of a thorough digital examination in diseases of the rectum. In regard to the different varieties of carcinoma he considers the adenocarcinoma of the rectum of the most common occurrence, and in his experience the scirrhous and encephaloid forms of the disease have been rare. Several instances were noted of cases which had come under his observation, where in opposition to the usual rule that carcinoma of the rectum usually proves rapidly fatal, five, ten or even twelve to fifteen years had elapsed before death, the patient in the interim remaining in fairly good general condition. If radical procedure is to be undertaken the importance of early operation was urged, and when the disease has become far advanced before surgical relief is sought colostomy is thought to be the most advisable measure, as at this time only palliation can be hoped for, and this operation seems to afford more relief than any other.

The different operations in use for the removal of hemorrhoids was carefully considered and the Doctor stated that after more or less experience with all of these he feels that ligation is to be preferred. The Whitehead operation was making a major procedure out of what should be a minor one. The author stated that he had known excellent results to follow carbolic acid injections, but felt that the untoward results sometimes following this method more than overbalanced its merit. Regarding the clamp and cautery the chief objections seemed to be the liability of hemorrhage following the operation when the stump is cut off too close, and in some instances embolism has occurred, followed by sudden death. With the ligature operation, the hemorrhage, if it occurs at all, usually happens before the patient comes from under the influence of the anesthetic and no instances have come under his observation where secondary hemorrhage has occurred.

DR. A. H. HULSHIZER felt that the operation which each individual was most familiar with would give the most satisfactory results, for the reason that it would be performed in a more skilful manner, and stated that in his own experience in cases where the ligature had been used, which is the method he prefers, there had been little or no complications.

DR. E. W. HOLMES urged the necessity for thorough local examination in all cases of rectal diseases, and cited instances where, under mistaken diagnosis, due to the physician relying wholly upon the clinical conditions present, grave errors had been made in treatment, and relief by operation delayed until it was too late. Reference was made to an electric proctoscope which had been recently placed on the market which seemed to be a very valuable instrument.

DR. G. BETTON MASSEY discussed at some length the different varieties of cancer and the various methods employed in their treatment and from his own experience is inclined to favor the electric cautery. In two cases which have recently come under his observation he has used this method with very satisfactory results. He especially urged the early recognition and treatment of this condition.

DR. MORDECAI PRICE said that the different operations performed by different surgeons for rectal disorders is due principally to the individual's familiarity with some particular operation. Formerly he was much in favor of the Whitehead operation, but some years ago saw a case in which the after-results were such as to deter him from practicing it further. Since that time he has been using the clamp and cautery, and he has never experienced any untoward results therewith. Regarding carcinoma of the rectum he is of the belief that there are very few, if any cases in which it can be cured.

DR. LEWIS H. ADLER considered that, notwithstanding the fact many surgeons are opposed to operating on hemorrhoids when they are in an inflamed condition, it is better to operate at this time than to wait until the disease has made such progress that the patient is greatly weakened thereby, which will be the result in a majority of the cases, owing to the fact that when the patient is not suffering pain from the piles, he will not consent to an operation. Stress was laid upon the importance of differential diagnosis between external and internal piles, and for the relief of the external variety the thermo-cautery was recommended. He considered the clamp and cautery as superior to the ligature and believed that when this method is properly used the danger is practically nil.

DR. ANDREW J. DOWNES considered that one of the most essential points was to be sure not to include the skin in either the clamp or ligature, as he thought that this was responsible for much of the pain following either method. For the purpose of controlling hemorrhage, instead of the ligature, he recommends the electro-hemostatic forceps.

SAN FRANCISCO COUNTY MEDICAL SOCIETY.

Monthly Meeting, held Jan. 14, 1902.

Dr. John C. Spencer, in the Chair.

A Brief Resume of the Present Aspect of Scleroderma.

DR. A. B. GROSSE read this paper. After a review of the etiology, course and clinical aspect of the disease, he presented a case, one of seventeen which he had the fortune to observe, and the second only which had been reported in San Francisco, the first having been reported by Dr. Leo. Newmark in 1892. C. W., male, aged 51, nativity Schleswig-Holstein; porter, mar-

fied, presented himself March 25, 1901. He had had gonorrhea, stricture, epididymitis and chancre not followed by secondaries—all over 25 years ago. About 12 years ago he noticed swelling, rigidity and formication of skin and muscles of both hands, later encroaching on half the forearm. Symptoms were especially noticeable on days he did not work. At present time skin of fingers was thin and parchment-like, muscles rigid, fingers flexed, neuralgic pains in hands and forearms; impaired motor function makes him useless for his occupation. Skin of face was affected from chin to a line through outer canthi of both eyes. Mucous membrane of mouth was affected, scalp indurated, also feet, upper half of legs and lower half of thighs edematous.

August 25, 1901: Forehead becoming affected; hands and forearms in stage of atrophy, lower half of thighs to toes, stage of infiltration; bands of sclerodermic patches on abdomen and chest; paroxysms of sweating; complains of cold; general pigmentation, but much lighter than Addison's. Nov. 11, 1901: Skin symptoms are progressive; he complains bitterly of sensation of cold; formication and shooting pains in finger tips and unbearable neuralgia of extremities and joints. Dec. 26, 1901: Skin lesions have progressed rapidly; skin is tight over bony prominences and very painful; pigmentation well marked; perspiration now only of feet and legs. Jan. 9, 1902: Right side of body is much more involved; marked loss of function and deformity of right hand and paretic condition of right side of face; he can not chew food; sense of taste is impaired; complains of seeing double; he has not perspired for one week. Jan. 13, 1902: Definite change for worse since last visit; shooting pains through chest and down lumbar spine; breathing and performance of necessary motions are difficult; clonic contraction of muscles of both hands.

Four Cases of Puerperal Toxemia Treated by Accouchement Force.

DR. J. F. MCCONE read this paper. He said that opinion was divided as to the expediency of manual dilatation and incision of the cervix uteri with rapid emptying of the uterus in cases of eclampsia, and as these were comparatively new methods of treatment and there were few statistics as to results he reported the following cases of extreme puerperal toxemia:

CASE 1.—Mrs. F., primipara; aged 22; previous history negative; date of expected confinement, Feb. 26, 1900. On Nov. 1, 1899, urine was examined, no albumin, urea 2 per cent., no untoward symptoms. On Nov. 10, headache and tingling existed in left ring finger. On Nov. 11, 9 a. m., eyelids were swollen, face disfigured, hands pale and swollen, ankles swollen and feet shapeless; she had severe frontal headache and dimness of vision. Patient was removed to hospital. In ambulance first convulsion occurred so severe that lower jaw was dislocated on both sides. She arrived at hospital unconscious, pulse weak and rapid, breathing short and shallow. Cervix was cut laterally and a five and one-half months' fetus rapidly extracted; placenta was removed and uterine bleeding encouraged by abdominal poultices and warm douches. There were two subsequent convulsions; 150 c.c. of urine were excreted the first day. In six weeks urine was normal and patient in good health.

CASE 2.—Mrs. V., aged 39; ten years ago, after pernicious vomiting, swelling of face and extremities, aborted a 3 months' fetus. Feb. 24, 1900, she was six months pregnant; conditions were normal. April 21, amount of urine decreased and albumin present. Milk diet was ordered, purgatives, diuretics and diaphoretics were given. May 1, she had a short convulsion; 50 c.c. of bloody urine were passed in 24 hours. She was removed to hospital. May 2, there was general edema, dulness of sight and intellect, and epigastric pain. Nitroglycerin, salines and hot-air baths were ordered. Urine increased, albumin lessened, patient remaining stupid. May 5, she had a second convulsion; accouchement force was decided upon. Third convulsion occurred before operation; patient was deeply cyanosed, pulse rapid and weak, with respiration labored. We delivered fetus, dead several days. There was no further convulsion; recovery uneventful.

CASE 3.—Mrs. S., aged 44, four children, pregnancies normal. Last menstruation was April, 1901. She came under care Sept. 13, 1901, suffering from constant nausea and severe frontal headaches. Blindness occurred following gradual loss of vision for two weeks past. She had been on milk diet, salines and nitroglycerin under the care of country physician. Sept. 15, she was restless; sightless eyes, edema of face and extremities; mind much disturbed, persistent vomiting, epigastric pain; temperature was 96, pulse 98. She was placed on milk diet, nitroglycerin hypodermically, hot-air baths and high enemata of normal salt solution. Sept. 16, amount of urine was 150 c.c. Maniacal tendencies existed; vomiting uncontrollable. Manual dilatation of cervix and version were made; dead fetus delivered. Two hours after operation vomiting had stopped, but violent mania ensued lasting for thirty hours, when it suddenly subsided. Amount of urine became very great, passing 3000 c.c. on the fourth day. Sight improved and in three weeks patient recovered.

CASE 4.—Mrs. B., primipara, aged 23, previous history good. Nov. 23, 1901, she entered hospital seven months pregnant; suffering with nausea and vomiting for two weeks past, headache and epigastric pains and general edema. She passed urine 400 c.c. in 24 hours, urea 10 gms., albumin 1.8 gms. Patient was put on mag. sulph., infusion digitalis, milk diet and hot baths. Nov. 26, urine amounted to 350 c.c. Nov. 27, 1 p. m., she had a convulsion lasting twenty minutes; patient remaining cyanosed, respiration labored, pupils contracted. Chloral was given by rectum. At 4:10 p. m. she had severe convulsion. At 4:30 p. m. manual dilatation and multiple incisions of cervix were made, forceps applied and seven months' child delivered alive. There were no further convulsions; gradual increase of urine and decrease of albumin. Dec. 14, mother and child left hospital in good health.

In Cases 2 and 3 the fetuses were dead, refuting the statement often made in text-books that convulsions ceased when fetus perished. Urine charts showed a progressive decrease in the albumin and increase in urea after the operation in Cases 1 and 2, but in Cases 3 and 4 the albumin decreased, the amount of urine increased, but amount of urea bore no constant relation to condition of patients.

On Some Surgical Affections of the Parotid Gland.

DR. EMMET RIXFORD read this paper. He said that because of its peculiar anatomic relations the parotid gland was of extraordinary surgical interest, from a pathologic standpoint, on account of the great number of surgical affections to which it is subject; and from an operative standpoint, on account of its proximity to important structures, its transmission of important nerves and vessels and the peculiar properties of its secretion. The lymphatic glands of the parotid were all situated within the capsule or fascial sheath of the gland consisting of a superficial and a deep set, and receiving, as they do, lymphatics from wide regions so prone to infections as the eyelids, the external ear, the auditory meatus and the posterior nares, explained many cases of suppurative processes in the parotid region. The excretory duct opening directly into the mouth was considered the most frequent transmitter of pyogenic bacteria into the parotid, probably accounted for by diminished secretion of saliva in fevers, e. g., typhoid, pneumonia, cholera, etc., and after large abdominal operations. In dispensary practice an eczema of the ear with a painful swelling over the parotid was a common thing. The sheath of the parotid mingling with the periosteum of the ramus at its posterior border pus might reach the parotid by direct extension from an osteomyelitis or periostitis of the lower jaw. When pus was superficial incision was without risk to facial nerve or carotid, but when deep it was far safer to incise only deeply enough to open fascia over the gland and then use blunt dissection. If deep incision was necessary it should be parallel to facial nerve. Cavernous angeioma rarely occurred in the salivary glands, although common just beneath the skin of face. An ordinary subcutaneous angeioma in the parotid region was not properly an angeioma of the parotid gland and diagnosis as such should be made only when the

microscope showed gland tissue between its lobules. In a baby one year old he had removed a true angeioma penetrating deeply into the parotid, which was shelled out with comparatively little difficulty. Opening into the gland was 2½ cm. in diameter and exposed the branching facial nerve crossing the floor of the opening. Primary union resulted with very slight scarring. The so-called mixed tumor was benign, at least in the beginning, often lasting 8 or 10 years before becoming large enough to lead the patient to undergo operation. It was among the more frequent tumors of the parotid and might contain cartilage in varying amounts. He cited case of a woman, age 35, with tumor of the parotid; hard, nodular, the size of a man's fist. First noticed 4 years before. Tumor extended down to level of hyoid bone. Facial nerve was displaced downward 6 or 7 cm. below normal situation lying in groove between two large nodules of the tumor. Wound closed with primary union and recovery. Sarcoma as a primary tumor of the parotid was rare and might be of any one of the ordinary forms of sarcomata and might be encapsulated, a fact of enormous value in prognosis. He reported a case of removal of encapsulated sarcoma together with entire parotid gland one year ago with no sign of recurrence at the present time. In two cases of epithelioma of the cheek the inner end of Stenson's duct was removed and communication of the remainder with mouth established. In first case 2 cm. of the duct were taken away, a funnel of mucous membrane was drawn into the wound and fastened to the anterior edge of the masseter muscle, and the end of the duct introduced through its apex and secured with fine silk sutures. Union resulted with no leakage of saliva through wound. The dimple on inner side of cheek caused no difficulty in mastication or from food lodging in it. In the second case excision of nodule required cutting directly through the whole cheek, making an opening 6 cm. in diameter which was sutured antero-posteriorly in order not to limit the action of the lower jaw; 3 cm. of the duct had been removed. A strip of mucous membrane 5 mm. wide was dissected from the edge of the inner wound and brought out around the edge of masseter and united to the remnant of the duct with fine silk suture. Union occurred without suppuration in wound in cheek, and the new duct remained open and could be entered with a fine probe.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, held Jan. 16, 1902.

The Vice-President, Dr. George L. Peabody, in the Chair.

The Food Factor as a Cause of Health and Disease During Childhood.

DR. JOSEPH E. WINTERS pointed out the paucity in milk of iron, and that while the infant begins life with a store of iron in the liver and other parts of the body, this iron is gradually used up, so that by the time the weaning time arrives the system is in need of a new supply of iron. For this reason, late weaning or the too prolonged use of an exclusively milk diet will cause anemia. Oatmeal was found to be rich in the constituents necessary for the proper growth and development of the child at this period of life, iron not excepted. It was, however, indigestible unless the cellulose were removed by cooking and straining. It was not prudent to change to cereals in the heated term, and it was often well to substitute barley at this season of the year. A child of 15 months should be allowed a crust of stale bread twice a day, and should be given also whole milk, oatmeal or barley jelly, and a soft-boiled or poached egg two or three times a week. It should be remembered that in the growing child carbohydrates were necessary in order to meet the large demand for energy and at the same time shield the proteids and fats from oxidation so that they may be stored for future needs. Nitrogenous matter is essential to every vital process, and proteids must be supplied to the growing child not only for the building up of the muscles but for the proper growth of other structures. Unlike the adult, the child required a generous supply of mineral salts with which to build up the osseous system, but in order that they may be properly assimilated it is absolutely necessary that they remain as in nature in organic combination. An abundance of fat should be the main characteristic of the diet of the young child. The relatively large heat-radiating surface in the child called for an adequate supply of heat, and this was best secured by an ample supply of fat in the food. If the latter were deficient in fat, rickets would result. There was no apparent difference in the nutritive value of animal and vegetable proteid, and the latter possessed the advantage that it is free from crystalline extractives which exist in meats in the proportion of 15 per cent. Metabolism was especially active in the growing child, and an excess of animal food, by over-stimulating this metabolism, would interfere with the laying on of fat and of muscular flesh. One of the greatest evils of a meat diet was that it usually created in the child a distaste for cereals, vegetables and milk—in short, acted very much like coffee, tea and alcoholic beverages. The importance of having a due proportion of the alkaline carbonates in the food might be inferred from the fact that an alkaline fluid was essential to the proper functioning of the body cells. These alkaline bases were to be found in organic combination in certain vegetables and cereals. Vegetable food was probably the chief factor in the production of the coloring matter of the blood. Dr. Winters made strenuous objection to the present tendency to teach that beef and beef juice should form a prominent part of the diet of very young children. He declared that there was more so-called rheumatism, anemia, valvular disease of the heart and chorea in children at the present time as a result of this too free use of meat in the diet of young children than from any other cause. Meat juice should not be given until the age of three years and then only sparingly.

DR. LEROY M. YALE said that his experience had led him to practically the same conclusions. The children of the poor, by their free outdoor life, had an opportunity to offset in a measure these defects of the diet, but not so the children of the rich, who in their staid constitutionals had no chance to exercise freely; hence, the latter were often the victims of rheumatism and gout.

DR. JOHN DORNING thought the reader of the paper had done a good service in calling attention to the dangers of using beef juice too freely in the diet of young children. It was not rare to find an infant of three months receiving from half an ounce to one ounce and a half of beef juice daily. Milk and cereals should be the chief articles of diet, and he would place oatmeal at the head of the list for both children and adults. He preferred to give the children whole-wheat bread.

DR. THOMAS S. SOUTHWORTH said that the transition from an exclusively milk diet to a mixed diet was a critical period, and without adequate and enlightened medical supervision the child was apt to lay the foundation for much ill health. He hardly felt, however, like agreeing with Dr. Winters in such a wholesale condemnation of beef juice for young children, though admitting that if given in too large quantity it was deleterious. He felt sure that it was often valuable, not only as a nutrient but as a means of improving the quality of the blood.

DR. ELMER LEE was of the opinion that only such food as was in itself capable of germination was suitable for either the child or the adult. Meat was not only costly, as compared with cereals, but was of low nutritive value.

DR. WINTERS, in closing, declared that many of the proprietary infant foods in the market were devoid of any nutritive value by reason of the chemical process to which they had been subjected in order to preserve them. The milk with which they were given to the child, and not the so-called food, was really to be credited with any good resulting from their use. In his experience, the children of the well-to-do in this city were unable, as a rule, to take whole-wheat or other coarse bread without digestive derangement, as he had many times proved to his own satisfaction by watching the digestive trouble disappear simply by forbidding the use of such bread. He would guarantee that an anemic child, free from organic disease and from infection, if given milk, cereals and vegetables in proper proportions would, in every instance, become rosy and rotund.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

PRESCRIPTION WRITING, XII.

(Continued from page 347.)

Methods of Administration—Continued.

Local applications of medicines may be employed on mucous membranes as well as on the skin; and when applied to other surfaces than the skin aqueous solutions, washes and gargles may be used.

When drugs are applied to the skin in order to produce general systemic effect it is usually in those cases in which the stomach has to be protected for certain reasons and where hypodermic medication can not be judiciously resorted to. Difficulties may sometimes arise in calculating accurately the dose of the preparation used, on account of the uncertainty of absorption.

Endermic Administration of Drugs.

This method consists in producing a raw surface by means of a blister, which will readily absorb the medicinal substance, such as strychnin, morphin, atropin, or quinin. This method was formerly employed, but is practically obsolete, being superseded by hypodermic medication.

The Use of Liniments.

Liniments are less used than formerly. Their value probably does not consist in the properties of the ingredients they contain so much as in the vigor of the rubbing or massage of the parts to which they are applied. Their effects are purely local. In the application of liniments mistakes are often made by saturating the bandage with a liniment containing one of the volatile preparations, thus producing a large blister or possibly sloughing. The following are the official liniments: Linimentum ammoniæ (volatile); linimentum belladonnæ; linimentum calcis; linimentum camphoræ; linimentum chloroformi; linimentum saponis; linimentum sinapis comp.; linimentum terebinthinæ. The strength of these liniments range from 10 to 20 per cent.

Ointments.

Some drugs, if properly mixed with certain fatty substances as a vehicle, will be absorbed through the skin. In this manner mercury can be given and will be absorbed, if well rubbed in, without any abrasion of the skin. Quinin is often administered to children by this method. It can be mixed with lanolin, which is the best vehicle for such purposes. The selective points for application are the axillary spaces, and the inner side of the thighs and groins. Mercurial inunctions may be rubbed in between the scapulæ.

In some of the venereal clinics of Europe patients with bared backs are daily placed astride a long plank, one in front of the other; each one is engaged in rubbing a definite amount of the mercurial ointment into the skin of the patient immediately in front of him.

Oleates are supposed to be absorbed more readily than other ointments. There are three official oleates: oleatum hydrargyri, oleatum veratinæ and oleatum zinci.

Suppositories.

Drugs are sometimes administered by the urethra, vagina or rectum, either for local or systemic effects. When introduced in the form of a suppository, oil of theobroma is most frequently used as the base, as it melts at the temperature of the body and remains as a solid at the ordinary temperature outside the body.

The following rules are generally observed in making the different forms of suppositories: Rectal suppositories should be cone-shaped and of about one gram in weight (15 grains). Urethral suppositories should be cylindrical or pencil-shaped and weigh about one gram. Vaginal suppositories should be globular in shape and weigh about three grams. Suppositories for children should be proportioned accordingly. Glycerin is sometimes used as a vehicle, being substituted for cocoa-butter.

(To be continued.)

To Remove Dandruff.

According to *Merck's Report*, among the remedies which have been found to be most serviceable in the treatment of dandruff are resorcin, tannoform, salicylic acid and boric acid. The following mixture is recommended as being most efficacious:

℞.	Resorcin	3i	3|75
	Tannoform	3i	3|75
	Acidi salicylici	gr. v	|32

Misce. Dissolve the powder in three ounces of alcohol and one ounce of water and filter. Sig.: Apply locally to the scalp.

Or:

℞.	Resorcin	3i	3|75
	Acidi borici	3ss	1|90
	Aquæ	3iv	120|

M. Sig.: Apply locally to the scalp.

The foregoing ingredients may be incorporated with an ointment if desired, such as aquæ unguentum rosæ (cold cream), adeps lanæ hydrosus, petrolatum, etc.

Treatment of Bronchitis with Bronchoplegia.

Martinet, as noted in *Med. News*, states that in treating bronchitis the two general indications are to lessen the cough and diminish the bronchial secretion. But a third indication, sometimes of great importance, is to combat bronchoplegia, the paralysis of the smooth muscles of the bronchi. This may be due to the toxins of certain infectious diseases, diphtheria, influenza, etc., or may be produced by mechanical causes in the course of chronic bronchitis. There is gradual progressive dyspnea with ineffectual cough, accumulation of secretions and congestion. In such a condition an opiate or sedative might do harm. Drugs that will stimulate the nervous system and reawaken the bronchial contractility are required. A cardiotonic and hemostatic pill of value is:

℞.	Ext. hyoscyami	gr. v	|30
	Quininæ sulph.	gr. xxiv	1|50
	Ergotin	gr. xlv	3|

M. ft. pilulæ No. xxx. Sig.: Six or eight pills daily.

Renaut's treatment of bronchitis is to give balsams, such as terpin, syrup tolutani or Canada balsam for the first three or four days; then for as long a time he gives ergotin combined with opium or hyoscyamus as a suppository. At the same time he prescribes the following pills:

℞.	Ext. hyoscyami	gr. v	|30
	Terpin	gr. xlv	3|
	Ergotin	gr. xxiv	1|50

M. ft. pil. No. xxx. Sig.: One pill three times a day.

In bronchoplegia accompanying la grippe he regards strychnin as the most useful remedy, as follows:

℞.	Strychninæ sulph.	gr. ss	|03
	Ergotin	gr. xxiv	1|50
	Quininæ sulph.	gr. xlv	3|

M. ft. pil. No. xxx. Sig.: Take one pill every two hours with a hot infusion sweetened with syrupus tolutani and containing a teaspoonful of old brandy.

Formalin in Glycerin.

Jordan, in the London *Lancet*, has found that by combining formalin with glycerin the irritating nature of the drug and the pain which it causes may be prevented. Applied to the throat with a brush, a single application can be depended on to kill every micro-organism with which it comes in contact. In follicular tonsillitis formalin in glycerin in strength of 2 to 4 per cent. is a specific if used before there is a deep collection of pus. After a single thorough application the temperature falls to normal within a few hours and remains normal. The application is usually attended by a little soreness, lasting only

a few hours. Formalin in glycerin is useful in all parasitic skin diseases, especially in tinea tonsurans. The entire area is cleansed with soft soap and water and a 4 per cent. solution of formalin in glycerin is applied.

Sodium Citrate in Diabetes.

Sodium citrate has been recommended by Dâlché and Cartaret, in *Bull. Gén. de Thér.*, as a valuable preparation in aiding in the reduction of the excretion of sugar. It is said not to disturb the stomach; for, by its decomposition in the stomach, free citric acid is set free and is well borne.

Gasoline Poisoning.

A subscriber sends us the following: "Having witnessed a nearly fatal case from swallowing gasoline and water kindly inform me what this liquid is chemically, and what the antidote is, if any. The results in this case were marked pallor, cyanosis, almost imperceptible pulse, pin-point pupils, sleepy and stupid state (requiring continued stimulation mostly of strong hot coffee) following the first condition of strangling, spasmodic croup, and vertigo."

Gasoline, like benzine, rhigolene, kerosene, paraffin, and many lubricating oils, is obtained from crude petroleum, and is a mixture of hydrocarbons, though mainly of the methane series, the formulas of the latter being in the order CH_4, C_2H_6, C_3H_8, etc. It may be classified as an intoxicant and gastro-intestinal irritant, along with other members of the hydrocarbon group, such as alcohol, ether, chloroform, chloral, and even turpentine. Its effects, therefore, are very similar to alcohol. The patient in this case probably passed through some of the stages similarly produced by alcohol, namely, the stages of stimulation, narcotism, anesthesia, not reaching the last or paralytic stage. The antidotal treatment, therefore, should be similar to that for the other anesthetics.

T. Sollmann, in his valuable text-book of Pharmacology, commenting on the use of gasoline as an anesthetic, states that toxic effects obtained in animals from too concentrated gasoline vapor consist primarily in very characteristic convulsions. The animal struggles violently, then falls on its side and claws the air with all fours, as if running; the pupils are widely dilated; reflexes are absent. The spasms are intermittent, and between them the subject is limp, except that the toes and eyelids continue to twitch. The respiration is first stimulated and then weakened. There is a paralysis of the vagus, then depression of the cardiac muscle and later of the vasomotor center. Either heart or respiration may stop first.

Medicolegal.

Circumstantial Evidence in Abortion Case.—The Supreme Court of Indiana holds, in Diehl vs. State, that the absence of the necessity for producing an abortion in order to save the life of the mother may be shown by circumstantial evidence in prosecutions for alleged criminal abortion.

Can Not Employ Physician for Smallpox Patients.—The Supreme Court of Idaho holds, in the case of Castle vs. Bannock County, that an individual member of the board of county commissioners can not employ a physician to care for smallpox patients at the expense of the county. Referring to a number of cases, from Indiana and other states, that were cited here, the court says that it will be observed, by reading them, that the board of county commissioners, or the city council of a city, are empowered to do certain things; but nowhere does it find in the citations that an individual member of the board of county commissioners, or a member of a city council can make a contract and thereby create an obligation binding upon the county or city. Of the duty of the officers to act promptly, and take all necessary steps to check the disease, when smallpox was found in the county, the court says that there could be no question. But, it goes on to point out, it did not appear from the record that a board of health was organized, or that any effort was made by any one in behalf of the city or county, excepting that the chairman of the board of county commissioners told the physician suing to look after smallpox patients, and that the county would pay him for his services. The record did not disclose any authority in the chairman to make this or any contract on behalf of the county. The law provides a clerk for the board of county commissioners, whose duty requires him to keep a record of all proceedings of the board. This is a public record, and all parties dealing with the county are charged with notice of this record. The physician suing could have informed himself of the authority the chairman had to make this contract, either as chairman of the board of county commissioners or as a member of the board of health (if there had been one), by an examination of the record, and, the court holds, it was his duty to do so before he accepted the employment. If he accepted such employment from the chairman, it was voluntary on his part, and he could not recover for such services.

Medical Treatment of Stowaway.—The United States District Court says, in the case of the *Laura Madsen*, that it is a principle of maritime law that a ship is liable for the necessary medical treatment and expenses incident to the cure of seamen who become ill or suffer injuries in its service. But in this case the man who was injured had imposed himself on the vessel. He was a stowaway, who was discovered when the vessel was one day at sea. He was not a sailor, but the captain required him to sign the shipping articles to serve as a member of the crew to the end of the voyage and he was marked on the articles as a stowaway. He was not required to do a seaman's work, but was willing to lend a hand whenever he found an opportunity, and while he was voluntarily hauling on the braces when the vessel was being maneuvered he fell on the deck, and was severely injured. On arrival in port, the physicians seeking in this case to recover for his medical treatment removed him to the hospital, and treated his injuries until he was practically cured. Whether the captain induced them to undertake the cure of the stowaway by promising that the ship would be responsible for their bill, was in dispute. According to the opinion of the court, however, it was immaterial whether there was such a promise by the captain or not. It says that neither the vessel, her owners, nor master owed the man any duty, except to give him humane treatment while he necessarily remained on board. He came to the port as a waif from the sea, helpless and destitute, and having no claim upon any particular individual, and was necessarily a public charge, or an object of private charity. The captain of the ship was not authorized to pledge the ship for the expense of his cure or maintenance as an act of charity. The authority of the captain of a ship to pledge the credit of the ship is limited by necessity. He has no authority to enter into any contract which can be enforced by a suit against the ship not required to make his ship seaworthy, or to meet her obligations as a carrier or to her crew. The act of signing the shipping articles at sea under compulsion did not attach the stowaway to the vessel, nor create any obligation different from what necessarily arose from the fact of his being on board by his own voluntary and wrongful act. Wherefore, the court dismisses the suit of the physicians, at their cost.

Effect of Prior Condition on Action for Malpractice.—The Supreme Court of Vermont says, in the malpractice case of Mullin vs. Flanders, that the physician sued requested the judge to charge the jury that, if the diseased condition of the suing party's feet, or either of them, at the time and after the operation on them was performed, or her natural temperament or physical weakness, were contributing causes to the condition complained of, she could not recover damages. The judge declined to so charge, but charged that she could not recover for anything produced by those causes, or any of them; that the physician was liable, if at all, only for the injury to the party suing attributable to his fault. With reference to this, the Supreme Court says that the request, as a whole, was not sound, and that the physician had no reason to complain of the charge as given. Continuing, it says that the condition the patient is in when the physician is called affects the question of damages, but does not control the right of action. The right of action depends upon the continuing or intervening conditions that are due to a neglect of duty on the part

of the physician after the patient is in a condition that may result in permanent loss of health or limb, and the physician has been called upon and has undertaken to exercise his skill in arresting the progress of the disease, in caring for the wounds, or in setting the broken bones. When a physician takes charge of a case under such circumstances, he impliedly represents that he possesses, and the law places upon him the duty of possessing and exercising, that reasonable degree of learning and skill ordinarily possessed by physicians and surgeons in the locality where he practices, and which is ordinarily regarded as necessary to qualify him to engage in the business of practicing medicine and surgery. It is difficult, the court proceeds, to see how, under a holding such as the request called for, a physician could ever be chargeable for the neglect of a duty that the law imposes upon him. When a man is in good health, and sound in limb, he has no need of a physician. It is when disease takes hold of him, or when he has met with an accident, that the physician is called, and the duty attaches, and these conditions which exist at the time he takes charge of the case may be said to contribute to the permanent loss of health or limb which follows; but these conditions do not prevent a recovery for the damages that are due to his neglect of duty.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record (N. Y.), January 25.

1 *The Food Factor as a Cause of Health and Disease During Childhood, or the Adaptation of Food to the Necessities of the Growing Organism. Joseph E. Winters.
2 *The Nature of Cutaneous Epithelioma, with Remarks on Treatment by the X-Rays. Charles W. Allen.
3 *Report of the Committee on Sanatoria for Consumptives. John H. Pryor.
4 Two Cases of Gastro-enterostomy with Entero-enterostomy Done With the Aid of the Elastic Ligature (McGraw's Method). Willy Meyer.
5 Report of a Case of Penetrating Wound of the Abdomen with Protrusion of Viscera and Injury to the Stomach—Operations—With a Later Development of Renal Symptoms—Recovery. William V. Pascual.

New York Medical Journal, January 25.

6 *Curettage of the Puerperal Septic Uterus: An Inexcusable Procedure. W. R. Pryor.
7 *Notes on Cow's Milk and Infant Tuberculosis. A. Jacobi.
8 *The Need of a Municipal Sanatorium for the Treatment of Tuberculosis. George L. Peabody.
9 *Paratyphoid. S. J. Meltzer.
10 *Nephro-ureterectomy; A Report of Two Cases. J. Wesley Bovée.
11 *Farm Colonies and Tent Life for the Tuberculous. W. Freudenthal.
12 The Personal Liberty Plea; The Most Common Argument Raised Against Medical Legislation. Floyd M. Crandall.
13 Transitional Displacement of Purulent Fluid of an Empyema by Normal Saline Solution at the Time of Operation (Rib Resection), Obviating Danger of Hemorrhage by Too Sudden Relief of Pressure (Mechanical), with Report of a Case and Method of Procedure. Arthur I. Boyer.

American Medicine (Philadelphia), January 25.

14 *Three Cases of Pancreatic Disease. Francis W. Murray.
15 *What Reliance Can Be Placed upon the Image Produced by the X-Ray from a Medicolegal Standpoint. Charles L. Leonard.
16 Diffuse Peritonitis Resulting from Appendicitis. Carl C. Warden.
17 *The X-Rays in So-called Sprains. G. G. Ross and M. I. Wilbert.
18 *Thiosinamin in Chronic Joint Affections. Henry S. Upson.
19 *A Rapid Method of Detecting Bacillus Coli Communis in Water. B. H. Stone.
20 Hemorrhagic Typhoid Fever. Report of a Case Ending in Recovery. C. B. Longenecker and Joseph Akerman.

Philadelphia Medical Journal, January 25.

21 *On the So-called Idiopathic Dilatation of the Esophagus (Saccular Dilatation of the Esophagus without Anatomic Stenosis). H. Strauss.
22 *Gastroptosis and Gastric Motor Insufficiency. J. Dutton Steele.
23 A Clinical Lecture on Scalp Wounds, and Cranial and Brain Injuries. Thomas H. Manley.
24 *Remarks on Vaccination in Relation to Skin Diseases and Eruptions Following Vaccination. Arthur Van Harlingen.
25 A Case of Pneumococcic Arthritis, Accompanying Acute Croupous Pneumonia. D. J. Milton Miller.

Medical News (N. Y.), January 25.

26 *The Causation of Multiple Neuritis. M. Allen Starr.
27 Criminal Abortion. E. Stuver.
28 On the Use of the Opiates, Especially Morphin. Oscar C. Young.
29 Gonorrhea in Women. J. B. Killebrew.
30 A Case of Spontaneous Rupture of the Eye-Ball. W. Whitehead Gilfillan.

Boston Medical and Surgical Journal, January 23.

31 Notes on the Life and Writings of Geronimo Cardano. Charles G. Cumston.
32 *Lymphatic and Portal Infections Following Appendicitis. John C. Munro.
33 *Notes on the Management of the Anesthetic in Operations on the Respiratory Tract. Harris P. Mosher.
34 *Notes on X-Light; Radio-active Substances in Therapeutics. William Rollins.

Cincinnati Lancet-Clinic, January 25.

35 Surgical Operations Upon Old People. J. C. Sexton.
36 Is Tuberculosis Contagious? Charles P. King.
37 The Law of Heredity. Brose S. Horne.
38 Operation for Congenital Absence of Uterus and Upper Two-thirds of Vagina; Laparotomy. Earl Harlan.

St. Louis Medical Review, January 25.

39 Dr. E. H. Gregory's Last Lecture, Completing Fifty Years as a Teacher of Anatomy and Surgery.
40 Remarks upon the Completion of Fifty Years' Work by Dr. Gregory as a Teacher of Medicine. F. J. Lutz.
41 On the Agglutination of Tubercle Bacilli and Its Application in the Treatment of Phthisics, According to Koch. Ernest Weigert.

American Practitioner and News (Louisville, Ky.), December 1.

42 Foreign Bodies in the Air-Passages. M. F. Coomes.
43 A Report of Three Cases of Pneumo-typhoid Fever. W. E. Shepherd.
44 A Few Remarks on Heroin Hydrochlorate. E. Y. Johnson.

Virginia Medical Semi-Monthly (Richmond), January 10.

45 *Some Experiences with Blood Examination. John B. Deaver and Edw. K. Moore.
46 Spina Bifida. J. W. Henson.
47 *A Review of Echinococcus Disease in North America. Irving P. Lyon.
48 Strangulated Hernia. Southgate Leigh.
49 A New Supra-vaginal Hysterectomy Forceps. John W. Dillard.
50 *Chronic Myocarditis. J. H. Musser.

Medical Fortnightly (St. Louis), January 10.

51 Etiology and Incubation of Scarlet Fever. Charles L. Hamilton.
52 Puerperal Fever. J. T. Woodward.
53 Neurasthenia. F. Savary Pearce.

Medical Age (Detroit, Mich.), January 10.

54 Phases of Diphtheria Frequently Overlooked. M. Heinberg.
55 A Contribution to the Study of Suicide. L. J. Rosenberg and N. E. Aronstam.
56 The Crescent Form of the Malarial Parasite. Robert B. Preble.

Journal of Nervous and Mental Diseases (Nyack, N.Y.), January.

57 Contribution to the Study of Spinal Fracture with Special Reference to the Question of Operative Interference. G. L. Walton.
58 Report of a Case of Epilepsy Presenting as Symptoms Night-Terrors, Impellant Ideas, Complicated Automatisms, with Subsequent Development of Convulsive Motor Seizures and Psychic Aberration. W. K. Walker.
59 A Case of Myelitis, Exhibiting the Results of Co-ordination Exercises. John K. Mitchell.

Annals of Otology, Rhinology and Laryngology (St. Louis), November, 1901.

60 A Case of Lupus of Face, Nose, Pharynx, and Larynx, with Rare Deformity of Larynx. Samuel E. Allen.
61 Epipharyngeal Lympho-Sarcoma in a Boy. Henry L. Wagner.
62 Radiographic Study (Showing an Impacted Metallic Disc in the Esophagus). Henry L. Wagner.
63 Vomiting with Tracheotomy Tube in Situ. Otto Sommers.
64 *The Principles of Treatment of Tuberculosis Laryngitis. St. Clair Thompson.
65 The Early Operation for Congenital Cleft Palate. Julius Wolff.

Archives of Otology (New Rochelle, N. Y.), December, 1901.

66 A Tumor of the Middle Ear Springing from the Inner and Posterior Tympanic Walls, Simulating Exostosis but Consisting of Calcareous Laminæ. William C. Braislin.
67 *The Microscope as an Aid to the Diagnosis and Prognosis in Chronic Suppurations of the Middle Ear. E. F. Snydacker.
68 A Case of Meningitis from Extension of Acute Purulent Otitis Media Through Osteomyelitis of the Petrous Bone; Operation; Autopsy; Microscopic Examination. Arnold Knapp.
69 Contribution on Otogenous Disease of the Brain, Meninges and Sinuses. (Continued.) Drs. Witte and Sturm.

Transactions of the Chicago Pathological Society, December 9.

70 *The Biologic Test for Semen. C. G. Farnum.
71 An Atypical Acid- and Alcohol-Proof Fungus from the Sputum of a Case Clinically Resembling Pulmonary Tuberculosis. A. P Ohlmacher.
72 Does the Pancreas Secrete a Sugar-Splitting Enzyme? Maximilian Herzog.

Brooklyn Medical Journal, January.

73 What Is the Prognosis in Tubercular Spondylitis? B. B Mosher.

74 Perforating Gastric Ulcer. Thomas B. Spence.
75 Foreign Bodies in the Upper Air Passages. Henry Wallace.
76 The Optic Nerve in Relation to Nervous Diseases. Edward W. Wright.
77 Intracranial Syphilis and Hemiplegia, with Report of Cases Treated in St. Mary's Hospital. L. J. Morton.
78 Pus Foci in Bone; Report of Cases. J. Sherman Wight, Jr.

New Yorker Medicinische Monatschrift, December, 1901.

79 *Paratyphus. S. J. Meltzer.
80 Ueber Einen Mit Urotropin Behandelten Fall von Enuresis Nocturna. Aug. Oreline.

Cleveland Journal of Medicine, December, 1901.

81 Symptomatology and Diagnosis of Cholelithiasis. A. Peskind.
82 Some Thoughts on the Indications for Forceps Delivery. R. E. Skeel.
83 How to Use a Medical Library. Bayard Holmes.
84 The Radical Cure of Umbilical and Ventral Hernia in the Adult. A. F. House.
85 *The Cystoscope: Its Diagnostic Value in Diseases of the Genito-Urinary Tract. Charles G. Foote.
86 "Paretic Dementia." R. B. Leister.

International Medical Magazine (N. Y.), January.

87 *Jamaica as a Health Resort. J. Howe Adams.
88 *Syphilis of the Rectum and the Anal Region. John A. Hawkins.
89 *The Climate of California. V. Bonney.
90 *A Simple and Efficient Apparatus for the Treatment of Fractures of the Shaft of the Femur. W. Wayne Babcock.
91 The First Treatment of Penetrating Wounds of the Eyeball. Walter L. Pyle.
92 Some of the More Uncommon Symptoms of Scarlet Fever. Floyd M. Crandall.
93 *Fistula in Ano: Its Relation to Phthisis. Samuel G. Gant.
94 The Duties and Rights of Medical Witnesses. William F. Craig.
95 Some Small Points of Practical Dermatologic Therapy. I. M. Koch.

Journal of Medicine and Science (Portland, Me.), January.

96 The Present Status of Our Knowledge of Infant Feeding. T. M. Rotch.
97 Fracture of Femur. F. C. Thayer.
98 Some Phases of Quackery. (Continued.) P. J. Noyes.

Medicine (Chicago), January.

99 *Relation of Insects to the Spread of Disease. Joseph McFarland.
100 Purulent Ophthalmia of the New-Born. Willis O. Nance.
101 *A Study of the Hereditary Effects of Alcohol. J. M. French.
102 *The Histopathology of the Pancreas in Diabetes Mellitus. Maximilian Herzog.
103 Acute Pharyngitis of the Streptococcal Type. Lewis S. Somers.

Fort Wayne Medical Journal-Magazine, December, 1901.

104 The Clinical Laboratory as an Aid in Diagnosis. George W. McCaskey.
105 Functional Headaches. Elmer E. Morgan.
106 Some Cases of Brain Traumatism. Edward J. McOscar and George W. McCaskey.

Occidental Medical Times (San Francisco), January.

107 Simulation of Insanity. (Continued.) A. W. Hoisholt.
108 The Diagnosis and Treatment of Appendicitis. J. C. Stinson.
109 Gout, Its Pathology and Prophylactic Therapeutics. J. J. Clarke.
110 Bone-Filling with Amalgam. J. Henry Barbat.

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111 "Meddlesome Surgery." Lucy Waite.
112 Hydrocele; Intracranial Infection; Incipient Tubercular Coxitis; Tuberculosis of the Left Hip Joint; Recurrent Carcinoma of the Breast; Strangulated Umbilical Hernia. N. Senn.
113 *The Cause of Diffuse Peritonitis, Complicating Appendicitis and Its Prevention. A. J. Ochsner.
114 Endovesical Surgery with Special Reference to Cystoscopy and Ureter Catheterism. F. Kreissl.
115 The Present Status of the Treatment of Pulmonary Tuberculosis by Operation to Secure Compression. A. F. Lemke.
116 Counter-Drainage. Denslow Lewis.
117 An X-Ray and Dissection of the Ureter and Utero-Ovarian Artery, the Utero-Ovarian Vascular Circle. Byron Robinson.
118 Prevention and Management of Infection of the Breast During Lactation. C. S. Bacon.

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119 A Suppressed Educational Problem. James J. Taylor.
120 Refraction. James A. Spalding.
121 Necessity for Revising Medical Fees. P. Maxwell Foshay.
122 The First-Year Medical Curriculum. Thomas D. Davis.

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123 On the Passing of the Trephine. Thomas H. Manley.
124 Report of a Clinical Case. (Unrecognized Fracture.) L. M. Murry.

Indiana Medical Journal (Indianapolis), January.

125 Hydatid Cyst of Liver; Report of a Case. Alois B. Graham.
126 Abnormal Development of Intestine and Obstruction of Bowel. J. C. Sexton.
127 Two Cases of Tubercular Meningitis. E. J. Kempf.

International Journal of Surgery (N. Y.), January.

128 The Surgical Assistant. (To be Continued.) Walter M. Brickner.
129 *Practical Suggestions on the Treatment of Rectal Diseases. James P. Tuttle.
130 Circumcision and Venereal Diseases. W. A. Spitzley.
131 Nose and Throat Work for the General Practitioner. (Continued.) George L. Richards.
132 Cancer of the Uterus. Harvey P. Jack.
133 Report of Cases from Surgical Practice. Howard Lilienthal.
134 Brief Notes on the Treatment of Gonorrhea. E. W. Eberlein.

Bulletin of the Johns Hopkins Hospital (Baltimore), December.

135 *A Contribution to the Study of Amebic Dysentery in Children. Samuel Amberg.
136 The Advances Made in Medical and Surgical Diagnosis by the Roentgen Method. Charles L. Leonard.
137 Pathological Report Upon a Fatal Case of Enteritis with Anemia Caused by Uncinaria Duodenalis. John L. Yates.

Medical Summary (Philadelphia), January.

138 Dysmenorrhea. E. N. Ritter.
139 "True" Cancer and a Plea for a More Rational Treatment. Wm. Alexander Armstrong.
140 The Sin of It (Hematuria). Hen H. Brodnax.
141 General Remarks on the Treatment of Ulcers. G. B. Beeler.
142 Neglected Remedies. Floyd Clendenen.
143 Hemorrhage. S. A. Buchanan.

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144 *Iodic Purpura with Fever. Alfred Stengel.
145 Quinin Rash, with Report of a Case. Horatio C. Wood, Jr.
146 *Culture Products in the Treatment of Tuberculosis. F. M. Pottenger.
147 Four Unique Cases of Appendicitis. Frank W. Garber.
148 Cleanliness, the Great Secret of Surgical Success. Carl Beck.
149 The Therapeutic Value of Adrenalin. John J. Kyle.

Medical Examiner and Practitioner (N. Y.), December, 1901.

150 Certain Factors Influencing the Death-Rate from Consumption. John Marshall French.
151 Pulmonary Tuberculosis as an Insurance Problem. Charles Lyman Greene.
152 The Present Status of the Medical Examiner for Life Insurance. P. Maxwell Foshay.
153 Industrial Insurance and the Prevention of Tuberculosis. Frederick L. Hoffman.
154 The Reflexes in Their Relation to Life Expectancy. (Continued.) J. Crocq.

St. Louis Courier of Medicine, January.

155 *Glandular Fever. J. Park West.
156 *Some Personal Observations of Malarial and Blackwater Fever on the West Coast of Africa. Vilray P. Blair.
157 Purpura. G. M. Tuttle.
158 *The Early Diagnosis of Measles. Philip Newcomb.
159 Spinal Curvatures—Presentation of Patients. T. C. Witherspoon.
160 A Case of Iodoform Poisoning. Charles H. Dixon.

Pacific Medical Journal (San Francisco), January.

161 Ether. George Adam.
162 Native Methods of Cure for Disease Among the Loas Tribes of Further India. Carl C. Hansen.

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1. **Infant Diet.**—Winter's conclusions are: Chemistry, physiology, and chemical physiology, have furnished unerring guides for the feeding of children. The time when and what farinaceous substances should be given is wholly evident. Meat juice is contra-indicated in very young children, owing to its exciting effect on the nervous centers, and the loading of the system with extractives which tax the excretory organs. During all the years of early childhood, meat and its preparations should be given only sparingly on account of their overstimulating metabolism, but chiefly for the reason that they create a distaste for cereals, fats, and fresh vegetables, thus depriving the system of materials needed to shield the proteids from oxidation that they may be stored for future needs, and of the necessary mineral salts which vegetables obtain direct from the soil. In a child, with its relatively large cutaneous surface and correspondingly rapid heat loss, the large demand for calories must not be covered by proteid to any considerable extent, otherwise there is a lack of deposition of proteid—or of muscle growth. Increasing quantities of carbohydrates and fats in the food decrease proteid metabolism; a more lasting deposition of proteids for future needs is thus brought about. To provide the mineral constituents necessary to maintain the normal reaction of the fluids of the body when these elements are being appropriated in large proportions for the growth of bone, muscle, etc., vegetables which obtain these elements direct from the soil must be consumed in fairly liberal proportions.

2. **Cutaneous Epithelioma.**—Allen reviews the theories of epithelioma and speaks particularly of the effects of x-ray

treatment, which he has seen in the practice of Pusey of Chicago and has employed to some extent himself. His experience has not yet lasted long enough to give him the authority to speak conclusively, but the results have been so far very encouraging. As regards the technique of the method he suggests caution and short applications in the beginning, protection of the parts not to be operated upon and a funnel-shaped metallic cone into the flare of which the active area of the tube is inserted, especially for mouth, throat, uterine and rectal work. After the first sitting it is well to wait a week before going on with the daily applications. The time of exposure may be gradually lengthened. If signs of dermatitis appear suspend the treatment until they subside. As regards the distance of the tube from the patient much depends on the length of exposure, the character of the tube, nature and size of the diseased area and the operator's experience. The most of his work has been done at rather close range, three to five inches. In specially severe affections as cancers, more chances might be taken as regards burns. We need not think that the cure would be delayed if the diseased parts do suffer from this cause. The time of exposure ranges between 3 and 30 minutes. He specially mentions the use of methylene blue, which he has painted over the diseased part coincidently with the *x*-ray treatment. He prefers this to the use of blue media at a distance. If it does not shut out the burning rays it does not harm, but gives the patient the benefit of an added form of treatment not devoid of benefit.

3. **Tuberculosis Sanatoria.**—Pryor's report calls attention to the exaggeration of the contagiousness and communicability of tuberculosis and its bad effects. He thinks that we should now try to do something to counteract it. He calls attention to the cost in human life of tuberculosis and its field for study, and maintains that the time will come when this will be appreciated and public sanatoria be founded more generally. We must propagate the belief that pulmonary tuberculosis is curable during the early stage.

6. **Curettage of the Puerperal Uterus.**—According to Pryor the statistics found by the Commission of the American Gynecological Society in 1898 showed that the normal mortality of puerperal sepsis was 5 per cent., while those cases where curettage had been made and the streptococcus found gave the frightful mortality of 22 per cent. Since then he has adopted and practiced a method of treatment which he applies to all cases in which he found the streptococcus present and this has given him and others who have tried it no mortality excepting where curettage had been done before coming into his hands. In these there was 33 per cent. mortality. He considers that curettage of the septic puerperal uterus is a mischievous and exceedingly dangerous procedure.

7. **Cow's Milk and Infant Tuberculosis.**—Jacobi reviews the literature of intestinal infection from milk and holds that the infantile intestine is particularly disposed to absorption both in its normal and diseased condition, and that peritoneal tuberculosis is exceedingly frequent. Therefore, any rule prohibiting the sale and use of milk of cows with diseased udders or general clinical tuberculosis can not be strict enough or too strict. This is a very urgent hygienic and sanitary question.

8. **Tuberculosis Sanatorium.**—This paper calls attention to the need of sanatoria for the tuberculous poor and maintains that it would be a public economy and possibly in time lead to the control or extinction of the disease.

9.—See ¶79.

10.—See abstract in THE JOURNAL, xxxvii, p. 1555.

11. **Farm Colonies and Tent Life for the Tuberculous.**—The value of open-air treatment is emphasized by Freudenthal; he calls attention to economy in tuberculosis sanatoria by using tents instead of erecting elaborate hospital buildings. He also mentions the necessity of occupation. Tent life has been found beneficial even in winter by those who have experienced it and good results have been obtained by physicians treating consumptives in tents.

14. **Pancreatic Disease.**—The history of pancreatic disease, its leading symptoms, such as salivation, diarrhea, glycosuria, fatty stools, imperfect digestion of muscle fiber, pain, tumor, etc., are noticed, and also the etiology, chiefly infection. Murray reports three cases, one of suppurative pancreatitis, one of the gangrenous type and one of pancreatic cyst with remarks on each case report.

15. **X-Rays in Legal Medicine.**—Leonard's article is to some extent a criticism of a previous one by Golding-Bird on skiagraphs and their medicolegal relations. He believes that the *x*-ray may have the greatest possible value in the diagnosis, though the experience and skill of the operator must be relied upon, and skiagraphs used in evidence should be made with the greatest care. This method of diagnosis should not be feared, but courted for the scientific aid which it is capable of giving in the treatment of fractures. It is more accurate than any other and its employment should be demanded wherever feasible.

17. **X-Rays in So-called Sprains.**—The paper of Ross and Wilbert is devoted to the elucidation of actual conditions in many cases of so-called sprains. It shows by line illustrations a number of possibilities from actual cases in practice, fractures, dislocations, etc., where the diagnosis was simple sprain.

18. **Thiosinamin.**—The value of this drug, which is a white crystalline substance made from mustard oil by heating with alcohol and ammonia, is due to its causing increase in the leucocytes in the blood and its value in causing absorption of morbid tissues and scars. He reports six cases where it has been employed, including some of rheumatic origin with fibrous deposits. He questions the theory of uric acid set free by leucocytes and shows that the drug is not, as would be expected from it, a cause of acute attacks of rheumatic disorder. It may be said in general that it is, so far as we now know, useful in removing fibrous deposits due to disease and is not a germicide or an antirheumatic. The cases that he reports, he thinks, indicate that it will be found useful in aiding the absorption of rheumatic fibrous deposits.

19. **Bacillus Coli.**—The method used in the Laboratory of Hygiene of the Vermont State Board of Health is here described by Stone, the bacteriologist of the Board. As soon as the water is received steps are taken to obtain: 1. An estimate of the total number of bacteria per cubic centimeter. 2. The determination of the presence or absence of bacillus coli communis. 3. If this organism is present the estimation of the number of bacteria per cubic centimeter. The estimation of the total number is made by thoroughly shaking up the water before diluting 1 c.c. with 99 c.c. of distilled water previously measured and sterilized. A 1 c.c. of the diluted specimen is then taken by a sterilized pipette and mixed with a tube of plating agar melted at a temperature of 40 C.

This agar, containing 0.01 c.c. of the original water, is then turned into a sterilized four-inch Petri dish and allowed to solidify on a level table. The plate is placed in a room temperature incubator (22 C.) and grown for 96 hours when it is removed and the number of colonies on the plate are counted. This number multiplied by 100 represents approximately the number of individuals per c.c. of the original water.

Determination of the Presence of Bacillus Coli Communis.—*A.* A Smith's tube filled with a 2 per cent. glucose bouillon is inoculated with 1 c.c. of the water to be examined and grown 24 hours at 38 C. If no gas is formed, the absence of the colon bacillus is shown.

B. If from 25 to 70 per cent. of gas is formed in the closed arm, a tube containing 10 c.c. of neutral broth to which has been added 0.3 c.c. Parietti's solution is inoculated with 0.5 c.c. of the contents of *A.* and grown 24 hours at 38 C.

C. A second Smith's tube is inoculated with 0.5 c.c. of the contents of *B.* and grown 24 hours at 33 C. (If there is no gas, we may be sure the gas producer in *A.* was not the colon bacillus. If, on the other hand, gas is produced in this tube, we may be reasonably sure that the bacillus coli communis is present.)

D. Further confirmation may be obtained by ascertaining the gas formula from *C.* The formula for the colon group is H/CO_2-2/1, further.

E. A pure culture can be easily obtained from *B.* by plating and the following reactions obtained: (1) Gelatin stab does not liquefy after seven days at 22 C. (2) Litmus milk reddens and coagulates in 24 hours at 37 C. (3) Dunham's solution: indol formed in three days at 37 C. (4) Morphology in bouillon: sluggishly motile (?) bacillus.

Estimation of Numbers of Bacillus Coli Communis.—At the same time the plates for total numbers are made, a litmus lactose agar plate of 0.5 c.c. of the original water is made. After solidifying, this plate is inverted and grown 24 hours at 38 C., when the colonies of bacillus coli communis may be identified as red colonies on a blue plate.

The following organisms have been subjected to this method, but only bacillus coli communis and the allied bacillus of hog cholera survive the check solution *B.* and grow in the second fermentation tube: Bacillus pyocyaneus; bacillus prodigiosus; bacillus cloacæ; bacillus liquefaciens; bacillus aërogenes capsulatus; bacillus of lactic acid; bacillus lactis aërogenes; bacillus coli communis; bacillus of hog cholera. Bacillus coli communis from many sources has been tried and in all cases survived the process.

Up to date we have had 550 specimens of water put through this process and we have yet to find an organism surviving the check solution and growing with gas production in the second fermentation tube, which does not give every typical growth reaction characteristic of bacillus coli communis.

21. **Idiopathic Dilatation of the Esophagus.**—Strauss reports a case which is of note on account of the very large amount of dilatation and discusses the condition. His view of the causation of the dilatation is that a developmental obstruction causes stenosis of the lowest portion of the esophagus, the "pars sphincteria inferior" as he calls the region between the hiatus and the cardia, and that a secondary dilatation is brought about by irritation of the mucosa by stagnation, causing inflammatory or excoriation conditions, and these producing spasms in the cardia which become the cause secondarily of progressive dilatation of the esophageal wall. He thinks that we must, however, look for the most certain cause of vascular dilatation of the esophagus without anatomically demonstrable stenosis, to be the coincidence of several synchronously acting factors.

22. **Gastroptosis.**—From a study of a large number of cases Steele finds that ptosis is more common in motor insufficiency of the stomach than changes in the shape and size. Gastroptosis and pyloric dilatation occur in 43 per cent.; next in frequency, was general dilatation alone, 35 per cent.; and then comes gastroptosis alone, 20 per cent., while the least common of all is general dilatation and gastroptosis, 10 per cent. Gastroptosis is much more common in females, while in males general dilatation is more common, uncomplicated dilatation especially. These figures show that ptosis of the stomach is more frequent than has been supposed. In women showing demonstrable alteration in the position and size of the stomach its presence is almost constant. The condition divides itself into two varieties; 1, total displacements downward; 2, that of the pyloric end alone. The latter is much the most common. The former has been denied, but that it exists is shown by the cases reported and simple ptosis of the stomach may be associated with more or less dilatation. The probability is that in pyloric dilatation the primary condition is gastroptosis, while in general dilatation in a large percentage the dilatation is primary. The causes are discussed. A very frequent one is increase in the volume of the abdominal cavity; another is pressure from above. The conditions most often associated with increase in the abdominal volume are repeated pregnancy and too early assuming the erect posture after parturition, while the most frequent cause of downward displacement is pressure from above, the effect of tight lacing or dragging of the skirt band. Glenard's theory that all displacements of the abdominal viscera arise from the presence of adhesions is now generally rejected. J. C. Webster has called attention to the separation of the recti muscles in some cases where the associated enteroptosis is really a form of hernia. Steele advocates a routine examination of the size and position of the stomach as indispensable in all cases showing functional disturbance. The patients are usually emaciated and often anemic, the abdomen sometimes pendulous, sometimes flat, but characteristically relaxed. The "belt sign" of Glenard may be employed, which consists in standing behind the patient, placing the hands on the lower abdomen and lifting upward and backward. If a sensation of relief is felt it is assumed that downward displacement is present. Webster demonstrates the amount of separation of the recti muscles by placing the finger tips of the right hand over the linea alba near the umbilicus with the patient in the recumbent position, while with the left he grasps the patient's hand, and she is asked to raise the head and chest in order to contract the abdominal muscles. The sense of resistance afforded by the recti will give an idea of the extent of their separation. The other diagnostic methods are discussed. Inflation, palpation, auscultation, etc., are noticed at length, also Einhorn's gastric illumination. The most common of the direct results of downward displacement are motor insufficiency and dilatation. Changes in the gastric secretion occur. Subacidity or the absence of free HCl seem to be the most numerous according to Steele's observation, and of importance as indicating the dietetic treatment. The complications of neurasthenia and sclerosis are mentioned. They are absolutely inter-dependent with the gastric abnormality. The treatment should be by the relief of the causes—tight lacing and the hanging of heavy clothing from the waist band. Food should not be given in too large amount at a time and rest should be allowed after eating. The stomach should be held in place by an abdominal band, which should be held against the tubes by perineal bands and one or more pads adapted to exert upward pressure will be found most useful. The operative measures that have been recommended are noticed, but the author holds that it is impossible to say whether or not they will give permanent relief. Still the recent experience of Bier, Blecher and Webster are encouraging.

24. **Vaccination.**—The various skin eruptions associated with vaccination are described by Van Harlingen, who groups them under the pure vaccinia and the mixed inoculation types. In the former he includes the secondary inoculations which may occur, and various angioneurotic conditions following the irritation. The generalized vaccinia is somewhat different in its character from the other eruptions and somewhat analogous to a general outbreak of infectious disease following a period of incubation. The impetigo or eczema attributed to the operation are really due to mixed inoculation. Syphilis, leprosy, etc., have been reported in the old days of humanized vaccine, but he doubts whether there is any case of true tuberculous infection thus produced. He insists on attention to cleanliness in vaccination, though asepsis might be carried so far as to make the virus itself inert. Shields are useful only for the first few days; if retained longer they may do harm as becoming themselves cultivation houses for pathogenic germs. After the first few days, or as soon as the vaccine virus has invaded the system, which is shown by the red and infiltrated areola, the shield should be cast aside, and antiseptic dressings frequently changed should be adopted.

26. **Multiple Neuritis.**—Starr reviews the various causes of multiple neuritis, the toxic metallic poisons such as arsenic, lead, mercury, copper, phosphorus and silver; and non-metallic toxic poisons such as alcohol, carbonic oxid, bisulphid of carbon, sulphonal and trional, the coal-tar products and nitrobenzol, all of which are noticed at length. Alcohol seems to be the most frequent of all the causes. The second type is that of multiple neuritis from dyscrasia. In this class he gives the epidemic form known as beri-beri and leprous neuritis, and that occurring as an accompaniment or sequela to diphtheria, which he holds is less frequent since the use of antitoxin. He emphasizes the frequency of neuritis following la grippe from which cause he has noticed all types. There are certain other dyscrasias such as tuberculosis, rheumatism, gout and diabetes; there are also cases of general multiple neuritis, occurring in the carcinomatous and in old persons with atheroma. It is probable that syphilis does not enter as a factor in the etiology of this affection. Finally, he alludes to certain cases where the cause can not be determined which we must call idiopathic and reports such a one. A double causation may many times be ascertained. Thus arsenic and lead poisons may act together with alcohol or la grippe.

32. **Appendicitis.**—Lymphatic and portal infections, singly or combined, are not as infrequent after appendicitis as many would hold. The obscurity of the symptoms and the insidiousness of their approach obscure the cases. Practically all lymphatic infections are curable by operation. Only a rare case of hepatic infection will be cured, but if the cases are allowed to go on until they become septic skeletons, the chances are almost hopeless. He says, in brief, that a persistent temperature, during or following appendicitis, inconsistent with other lesions and associated with lumbar spasm should suggest a lymphangitis; more or less perhaps fleeting jaundice, irregu-

chills, hepatic tenderness and progressive emaciation would suggest portal pyophlebitis following appendicitis, present or remote. He gives cases showing the occurrence of these complications.

33. **Anesthesia.**—Mosher recommends the use of a treadle arrangement for forcing ether vapor through a tube by means of bellows, which has been brought up to its present form by Drs. Thomas Fillebrown and M. F. Rogers, as specially advantageous in operations on the nose and throat. He favors ether rather than chloroform and gives details as to holding the patient, preferring to keep him in the upright position. The prejudice against this is groundless. Experiments on animals are mentioned that seem to show that stimulation of the pharyngeal plexus might cause stagnation of the heart by reflex action, but he thinks in the human species this hardly possible, but it might nevertheless be well to give atropin as a routine preventive measure.

34. **Radio-Active Substances in Therapeutics.**—Rollins suggests the use of a radio-active substance as a substitute for *x*-light. He has prepared a capsule containing 500 mgm. of radium with an aluminum front and back of comparatively non-radiable metal, which is to be worn over a lupus or superficial cancer or whatever disease it is desired to treat with these rays. He does not give any experience with it, but offers this suggestion.

45.—This article has appeared elsewhere. See THE JOURNAL, xxxvii, ¶23, p. 1561.

47.—Ibid., ¶84, p. 279.

50.—Ibid., 277.

57. **Spinal Fracture.**—After discussing the symptoms and reporting several cases Walton gives the following conclusions: "1. There are no symptoms which establish (otherwise than through their persistence) irremediable crush of the cord. 2. While total relaxed paralysis, anesthesia of abrupt demarcation, total loss of reflexes, retention, priapism and tympanites, if persistent, point to complete and incurable transverse lesion, the onset of such symptoms does not preclude a certain degree at least of restoration of function. 3. The prognosis without operation is grave. 4. While the results of operation are not brilliant, they are sufficiently encouraging to warrant us in making the practice more general. 5. In most cases it will be wise to operate within a few days of the injury, but a delay of some hours is advisable, partly on account of shock and partly to eliminate the diagnosis of simple distortion. 6. We have no infallible guide to the extent of the lesion. The operation at the worst does not materially endanger life nor affect unfavorably the course of the case, and may at least reveal the lesion and lessen the pain; it may sometimes save a patient from death or from hopeless invalidism of most distressing character. Instead of selecting the occasional case for operation, we should rather select the occasional case in which it is contra-indicated (the patient with great displacement of vertebræ, the patient with high and rising temperature, the patient plainly moribund, the patient still under profound shock). 7. The dura should be opened freely; it need not be sutured; drainage is not necessary."

64.—This article has appeared elsewhere. See THE JOURNAL, xxxvii, p. 863.

67. **The Microscope in Otorrhea.**—Snydacker reports three cases illustrating the value of the microscope in the detection of cholesteatomata and traces of carious bone. In each of these the findings warranted a radical operation, but in all three the patients refused to submit to it. He remarks that the presence of shreds of epidermis may not always indicate cholesteatomata, but simply a sort of reparative process. Only when the discharge persists after the epidermal formation has begun, when by its constant irritating contact it causes over-production of epidermis and this is constantly cast off, it may be regarded as a dangerous symptom. Only the discharge persisting for weeks and months should be considered dangerous. The appearance of bone disease may possibly not be a serious indication if it comes only from the ossicles, and the tympanic walls and mastoid cells are intact. The observations, however, of Grunert, who finds only two cases where the ossicles alone were involved out of a total of 108, indicate rather that the presence of carious bone has a bad signification.

70. See THE JOURNAL, xxxvii, p. 1721.

79. **Paratyphus.**—Meltzer discusses the cases of apparent typhoid which do not react to the Widal test. He says we have a description of a disease which already has been observed more than a dozen times and which clinically must be considered as typhoid, but in which repeated examination with the Widal reaction is negative. On the other hand, the sera of these patients react readily to bacilli which are isolated from the blood or from excrement. These bacilli belong to the intermediate group closely related to the meat-poisoning bacilli, but are decidedly distinct from these. The symptoms of the patients are, as already stated, exactly as in typhoid: headache, depression, continued fever, slow pulse, enlargement of the spleen, roseola and the diazo-reaction; also nose-bleed and intestinal hemorrhage, delirium, slight affections of the respiratory passages, post-typhoid osteomyelitic abscesses have been observed. All the patients recovered; there is yet no pathologic anatomy of the condition. According to Kurth's view these cases are of milder course than in true typhus and he thinks the old designation of gastric fever might be employed, but that of Schottmueller and one described by Gwynn certainly were severe. In seven of the cases the condition commenced with diarrhea which passed later into constipation, a condition which one rarely sees in typhoid. Gywnn has called these germs paracolon bacilli. Kurth and others have given various names, but the author prefers Schottmueller's designation of paratyphus bacillus. He thinks that in many cases there may be a mixed infection of typhoid and paratyphus and the Widal reaction occur late. See also ¶9 above.

85. **The Cystoscope.**—The history of the cystoscope is given by Foote, who prefers the Berlin pattern of instrument. He considers cystoscopy usually an easy and safe method of diagnosis of gastro-intestinal disease, which should be made in every obscure case and by it the presence of disease in one or both kidneys can be determined in almost every instance. Hence, its value as a preliminary to operation on the kidneys, since it renders the differential diagnosis between vesical and renal disease comparatively easy.

87. **Jamaica as a Health Resort.**—The advantages of Jamaica are described by Adams, who gives the cost of living there in detail, showing that quite a variety of diet can be had at comparatively moderate prices. He also mentions the mineral springs and baths. The climate, according to him, seems to be a very desirable one for a large class of invalids.

88. **Syphilis of the Rectum.**—The most common syphilitic manifestations in the rectal region are condylomas, which are often called piles, but, if uncomplicated by ulceration, usually rapidly disappear when treated by internal medication and the local use of calomel as a dusting powder, with daily ablutions with a weak solution of mercuric chlorid. Chancres are comparatively rare. Ulceration may occur during the secondary stage, but most frequently during the tertiary, and is due to gummatous deposits and infiltration of the submucous tissue. Gummas have been known to obstruct the bowels, but they usually disappear rapidly under the aggressive use of iodid. Infiltration may produce a fibrous condition with great contraction, and stricture is sure to follow syphilitic ulcer. If this occurs in the secondary stage the use of mercury is indicated. For the third the iodid or mixed treatment is best, but it must be remembered that at times the third stage seems to anticipate itself and a mixed treatment early required. It is well not to continue the internal administration of mercury when we suspect ulcerative papillitis of the rectal mucosa. We should use inunctions so as to rapidly produce the desired effect and at the same time keep the bowel clean with semi-daily enemas of creolin solution. Codein may be given for the pain or tenesmus. Hawkins finds it advisable to use sulphocarbolate of zinc 20 gr. to quart of warm water in an enema once or twice daily. In some cases divulsion of the sphincter

is necessary to secure proper drainage and the relief of pain. When syphilitic stricture exists it is advisable, he thinks, to use posterior linear proctotomy with the subsequent use of bougies, but he would give a very guarded prognosis, especially as regards the cessation of discharge. Ulceration is apt to persist and iodin do little good. Colostomy is all that remains for many of the cases, and it should be recommended as no worse than the disease. It allows the diseased surface to be kept clean and free from irritation.

89. **The Climate of California.**—The Colorado physicians, according to Bonney, are ready to admit that California is specially beneficial for certain cases of tuberculosis. He has been sending there many cases with bronchial disorders, cases of emphysema and certain forms of heart, kidney and rheumatic troubles, and has had satisfactory results. He does not endorse the prevailing opinion that nervous patients are aggravated in Colorado. He thinks possibly cases with hemorrhage err in making the trip to high altitudes too rapidly. A reasonable delay before starting and a period of rest immediately on arrival will obviate the unfortunate results. The hemorrhages that occur in Colorado are largely due to such cases and they occur most frequently in the spring, which he attributes to the winds and dust. During the spring he has been sending patients up to an altitude of 7500 feet and has never had a hemorrhage occur at Estes Park during the past six years.

90. **Fractures of the Femur.**—Babcock describes a rectangular splint suspended from a support which keeps the muscles of the thigh in relaxation. He has used, to his entire satisfaction, an ordinary anterior-angular arm-splint. The longer arm should have a length equal to that from the popliteal space to the heel; the shorter arm, a length equal to that from the popliteal space to the great trochanter. It should be slightly broader than the thigh and well padded. In applying it the leg is flexed to a right angle to the thigh and the thigh to a right angle to the body, and displacement corrected and the splint snugly fixed to the posterior aspect of the limb by several strips of adhesive plaster. The leg is supported in extension while the splint is carefully bandaged in position. The apparatus is swung from a point of support above the bed, the chief support attached at the angle of the splint and the extension sufficient to raise the corresponding hip slightly from the bed. The weight of the foot is carried by a bandage passing under the splint at the ankle; this is for support, not for extension. The position is not an uncomfortable one, while the center of gravitation is carried so far into the upper part of the body that active movement of the trunk or legs is discouraged. It has been a surprise to see how quietly children have stood the application of the apparatus.

93. **Fistula in Ano.**—The differential diagnosis of fistula in ano in its simple type from its tuberculous form, is described by Gant. Tuberculous fistulæ are usually secondary to intestinal ulcer caused by tuberculosis of some other organs, as the lung. Non-tuberculous fistulæ frequently occur in phthisical subjects also, due to emaciation, proneness to suppuration from slight causes and the result of bruises of the parts. The chief diagnostic points are the appearance of the rounded and elevated openings of the non-tuberculous forms, rounded buttocks, normal hair, nails, face, ears, and nose and voice; discharge is slight and yellow instead of profuse and watery or whitish; greater pain is caused by the introduction of the probe; lack of complications of cough or hemoptysis, tight sphincter as compared with patulous anus in the tuberculous, and the absence of tubercle bacilli.

99. **Insects and Disease.**—McFarland sums up the possibilities of dissemination of disease by insects in the following methods: 1. They may carry from place to place disease-producing micro-organisms on their bodies causing infection directly by lighting upon wounds and indirectly by alighting upon foodstuffs. 2. They may carry within their body germs of disease which have entered them by food and may subsequently be deposited elsewhere with the feces. This has been demonstrated in connection with tuberculosis. 3. The suctorial insect, by taking blood containing parasites from the bodies of diseased animals, may carry these upon their proboscides into the next animal bitten, directly and immediately affecting it. There are many cases in which anthrax has been apparently brought about in this way. Plague has been said to be thus disseminated, and tsetse fly disease is quoted as being thus produced. 4. Insects may take infectious germs into their bodies and transmit them to their offsprings, whose bites are infectious, as in cases of Texas fever of cattle. 5. Insects may take into their bodies parasitic organisms which there undergo a further development, the insect acting either as an intermediate or a definitive host, and transmitting the parasites to other animals in some changed form in which they are infective. The malarial organism is quoted at length as belonging probably to this class. Yellow fever is probably still another, also filariasis, all three disseminated by the different species of mosquito. 6. Insects may become infected with pathologic organisms and by falling into foodstuff thus impart infection to man. Such accidents are probably rare, but still it has been found that a fly can become infected with plague and die of the disease. The danger that might lurk in such an insect cadaver need not be dilated upon.

101. **Alcohol.**—Heredity of alcoholism is divided by French into three classes: 1. It may be direct, where there is a susceptibility and craving for it transmitted from one generation to another, the form remaining substantially the same. This is not uniform among children and it may skip a generation. Persons with such heredity can not be moderate drinkers, and can only escape inebriety by avoiding alcohol entirely. 2. It may be indirect as where inebriety in the parent or some remote ancestor has resulted in degenerated conditions and degeneracy which may suddenly break out into inebriety in some later generation. 3. The heredity may be complex as where various forms of degeneracy, disease and mental and nervous affections exist in several generations and finally result in inebriety in the succeeding one. He also mentions mental and moral heredity and quotes Morel and others. He concludes that alcohol is the greatest cause of degeneracy, both mental and physical; when not an inebriate, the hereditary victim is likely to be diseased, degenerate, mentally unstable or unbalanced, fanatical, eccentric or a genius. The hereditary inebriety develops rapidly at the first exciting cause and subjects of it can not indulge in alcohol safely. Alcoholism in such is difficult to cure and when apparently cured relapses are very liable to occur.

102. **The Pancreas in Diabetes.**—Herzog reviews the papers on the subject of the condition of the islands of Langerhans in diabetes and reports microscopic examinations of three cases. the results of examination are well in accord with what has been recorded by Scobolew, Opie, Weichselbaum and Stengel. The degeneration of the islands of Langerhans or changes in their structure are largely of the character of fibrosis.

113. **Appendicitis.**—Ochsner reiterates his views in regard to the treatment of appendicitis by gastric irrigation and nourishment only per rectum. His mortality since he has employed this method is less than one-fourth as high as it was in cases operated upon at once on making the diagnosis. Even in advanced cases of diffuse peritonitis there has been a marked decrease in the mortality. In many cases he has removed the appendices later and shown that the condition was not simply a severe catarrhal one. As a result of his clinical observation he formulates the following conclusions: "1. Peristaltic motion of the small intestines is the chief means of carrying the infection from the perforated or gangrenous appendix to the other portions of the peritoneum, changing a circumscribed into a general peritonitis. 2. This can be prevented by prohibiting the use of every kind of food and cathartics by the mouth, and by employing gastric lavage in every case in which there are remnants of food in the stomach or in the intestines above the ileo-cecal valve, as indicated by the presence of nausea or vomiting of meteorism. 3. The patient can be supported by the use of concentrated predigested food administered as enemata not oftener than once in four hours, and not in larger quantities than four ounces at a time. 4. This form of treatment, when instituted early, will change the most

violent and dangerous form of acute perforative or gangrenous appendicitis into a comparatively mild and harmless form. 5. Cases of perforative or gangrenous appendicitis with beginning general peritonitis can usually be carried through the acute attack safely with this method. 6. In all cases of this class gastric lavage should be practiced in order to prevent the absorption of decomposing material from the alimentary canal. 7. In cases of doubtful diagnosis this form of treatment should always be employed. 8. This treatment will prevent a large proportion of the most troublesome complications and sequelæ of appendicitis, such as ventral hernia, fecal fistula, extensive adhesions, etc. 9. The patient should be permitted to recover fully from his acute attack before an operation is performed, except in cases encountered within the first thirty-six hours after the beginning of an attack or in case of the formation of a superficial circumscribed abscess. 10. It often requires but a small amount of any kind of food to change a harmless circumscribed into a dangerous diffuse peritonitis. 11. The treatment does not protect the patient against a subsequent attack. 12. It does not contra-indicate the removal of a diseased appendix before the septic material has extended beyond this organ. 13. It is indicated in all intra-abdominal conditions in which it is desirable to prevent the distribution of septic material by means of peristaltic motion. 14. The laity should be taught to stop feeding and giving cathartics to patients suffering from intra-abdominal diseases."

129. **Fistula.**—Tuttle reviews the whole subject of fistula, calling attention to the importance of thorough study of physical, clinical and pathologic characteristics and making complete diagnosis in every case. He maintains that the percentage of failures in fistulous operations exceeds that of operations for cancer of the rectum. He thinks this statement may hardly be believed. Eternal vigilance is the price of healing in any of these cases. The surgeon can not safely dismiss the patient until every vestige of granulation and soft inflammatory tissue has disappeared. The causes of failure in many of these cases are imperfect drainage and persistent infection; he insists on thorough disinfection of the wound. In tubercular fistula, healing does not take place because of the pathogenic bacilli in the wound. In non-specific fistulas, complete drainage or radical removal of the entire fistula by incision with immediate suture is essential. It is not necessary always to cut through the fistula at once; cauterization will often give better results if it is done thoroughly. To be effective nitrate of silver should be used in solution in the strength of 900 to 1000 grains to the ounce of water and be applied thoroughly to the fistulous tract. He suggests one or two points in regard to the technique of the incisions, especially in deeper fistulas where this blind cutting from within outward is not only dangerous but unsatisfactory. The fistulous tract may be accurately followed and laid open on the skin until it reaches a point directly below the internal opening and then the internal tissues and muscles are cut squarely across. It is not necessary to incise the intestinal wall as high up as the perirectal abscess burrows. Excision of fistula with immediate suture is being more and more employed. He gives two or three little practical points: 1. Not to chromicize catgut to last more than six or seven days as too much chromicization makes it a permanent and irritating body. The deep wound should be brought together with a continuous mattress suture so as to avoid knots as far as possible, but this same suture should not be used to bring the edges of the external wound together. The ends of the muscles should be brought together by interrupted sutures of the mattress type, and composed of chromicized catgut, for at this point we need a prolonged maintenance of the part in position. After the deep wound has been brought together the skin should be united by interrupted or continuous silkworm-gut suture. The incision into the rectum should be treated as follows: The mucous membrane should be dissected off from each side of the wound to the extent of one-half an inch up to the level of the internal opening of the fistula. From this point upward it should be loosened sufficiently from the muscular wall of the gut to be brought down and attached to the skin just below the margin of the anus, after the manner of a Whitehead operation. This seals off from the intestinal canal the field of operation by healthy tissue and helps in obtaining union by first intention. In tubercular fistula only two courses are open: If the fistula is direct and can be thoroughly excised in all its extent and the wound immediately sutured, this should be done, but it should be as thoroughly done as in cancer operation. If the tract is wide and tortuous, making removal of all the pathologic tissue impossible, it should be thoroughly drained by a dependent incision upon the outside and the fistulous tract treated by methylene-blue, orthoform, or the Roentgen rays. Incision for drainage should be made with a Paquelin or electro-cautery so as to prevent the entrance of the bacilli through the wound. In tuberculous patients any surgical intervention is of doubtful benefit except where the opening is too small for proper drainage. Syphilitic, typhoid and dysenteric fistulas should be treated as in the simple non-specific type, at the same time employing what constitutional treatment is required.

130. **Circumcision.**—Spitzley argues for circumcision as a preventive of venereal disease.

135.—See editorial in THE JOURNAL of January 25, p. 253.

144. **Iodic Purpura.**—Stengel first briefly reviews the literature, the character of the eruption, the associated symptoms, joint manifestations and fever and the amount of iodism required. He shows from Robinson's case that a very minimum dose may produce this, even 1 gr. three times a day. In most cases, however, 3 to 10 gr. repeated three or four times a day were required, and he reports and illustrates cases of this condition and calls attention to certain symptoms suggesting Graves' disease, such as tremor, thyroid enlargement, cardiac palpitation, skin relaxation and sweating. These facts are rather suggestive of an actual state of the chronic iodism in Graves' disease itself. The diagnosis is ordinarily not difficult, but in the instances like the one reported there was some suspicion of constitutional or possibly cardiac disease; the suggestion of ulcerative endocarditis embarrasses the diagnosis.

146. **Tuberculosis.**—The value of tuberculin in the treatment of tuberculosis is pointed out by Pottenger, who from a careful review of the subject comes to the following conclusions: "1. Culture products do have a specific action upon tuberculous foci. 2. That this has not been recognized is due to the early unfortunate experience with tuberculin: (*a*) When it was used in too large and too frequent doses; (*b*) when it was employed in unsuitable cases; (*c*) when it was held responsible for all postmortem findings. 3. The field of usefulness for culture products is where recent tubercles are found, and this especially in incipient cases. 4. If used in advanced cases, culture products will help remove areas of recent extensions, but must not be expected to remove dead, decaying or newly formed tissue. 5. When culture products are used, they should be reinforced by every means at command. Every phase of the patient's health should be care for, and the proper hygienic and dietetic measures prescribed. 6. When the case is managed properly and culture products are used, the proportion of cures is greater than when culture products are not used. 7. Culture products produce an immunity which protects the patient from relapses; hence, make a permanent cure more often than hygienic and climatic treatment alone, which fact of itself should be enough to warrant their use in all suitable cases."

155. **Glandular Fever.**—West describes two cases and discusses glandular fever, what he considers as a distinct disease. He thinks there are no grounds upon which to suppose it to be a modified type of any other known acute infection nor any irregular form of any of the acute exanthematous diseases. The symptom-complex resembles catarrhal influenza in its sudden onset, high temperature, muscular soreness, prostration and slow convalescence. There is also enlargement of groups of nodes in influenza, but this is due to and commensurate with local lesions, and suppuration is not uncommon. In glandular fever this local inflammation does not exist or is so slight as to be wholly unaccountable for the trouble. The catarrhal symptoms are also fully as prominent in influenza as the gen-

eral ones. Almost all theories point to this disorder as an infection from the intestinal canal, and facts, he thinks, also point to this. The milder cases are accompanied by diarrhea, the severer by constipation and in every case relief only follows the remedying of the condition. Influenza is an epidemic disease, while glandular fever is restricted to house epidemics and rarely affects adults, and Pfeiffer's bacillus has not been found.

156. **Blackwater Fever.**—Blair describes the health conditions as he has observed them on the west coast of Africa. He gives a very unfavorable description of the malaria of this region and of the prospects of its abolition. He adopts the view of Stephens that blackwater fever is essentially a malarial disease in which quinin is the most common immediate determining cause of intoxication and that protection from malaria will protect from blackwater fever.

158. **Measles.**—Newcomb advocates the examination for Koplik's spots as a constant early sign of measles. He believes that segregation should be resorted to in each individual case, separating patient from patient, especially in hospitals. The dangers of overcrowding have been shown time and time again in epidemics.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below.

British Medical Journal (London), January 18.

1 *The Surgical Treatment of Obstructive Jaundice from an Experience of Over 200 Cases. A. W. Mayo Robson.
2 The Relation of Glaucoma to Thrombosis of Retinal Veins, with Notes of Cases. E. Harries Jones.
3 *Reflections on Ophthalmic Work in the Army. John Grimshaw.
4 *Ambulatory Treatment of a Ruptured Tendo Achillis. J. Lynn Thomas.
5 *A Possible Predisposing Cause of Cancer. Harold Mason.

The Lancet (London), January 18.

6 *Ocular Pain: Its Significance, Varieties and Treatment. Percy Dunn.
7 Typhoid Fever in South Africa. A. Elliot and J. W. Washbourn.
8 Note on the "Blood Relationship" of Man and the Anthropoid Apes. Albert S. F. Gruenbaum.
9 *On the Advisability of Removing the Appendix Vermiformis After Suppuration Caused by Appendicitis. William H. Battle.
10 *Izal in the Treatment of Phthisis. F. W. Tunnicliffe.
11 *Observations on the Nature and Treatment of Pernicious Anemia. Alexander McPhedran.
12 Friedreich's Ataxia. Guthrie Rankin.
13 *Report and Commentary on School Sanitation and Hygiene. Stuart A. Tidey.

The Practitioner (London), January 18.

14 Hypertrophy and Dilatation of the Heart. Thomas Clifford Allbutt.
15 The Treatment of Cardiac Dilatation and Asthenia. I. Burney Yeo.
16 Cardiac Dilatation and Hypertrophy. Richard Caton.
17 Points in the Prognosis and Treatment of Hypertrophied and Dilated Heart. Arthur Foxwell.
18 Prognosis and Treatment of Dilated Heart as the Result of Over-strain and Exercise. William Collier.
19 Dilatation of the Heart in Children. Eustace Smith.
20 On Hypertrophied and Dilated Hearts as Studied and Treated in Recent Times. A. E. Sansom.

Bulletin de l'Academie de Medecine (Paris), January 7.

21 *Successful Treatment of Cancer. L. Le Roy.—"Traitement du Cancer."

Bulletin Soc. Med. des Hop. de Paris, January 2.

22 Severe Lead-Poisoning in Storage Battery Works. M. Labbé.—"Intoxication Saturnine grave chez les ouvriers travaillant à la fabrication des accumulateurs électriques."
23 Cure of Vincent's Angina in Three Days with Methylene Blue. A. Chauffard.—"Angine de Vincent guérie en trois jours par des applications de bleu de méthylène."
24 *Early Diagnosis of Typhoid Fever by Bacilli in Blood. J. Courmont.—"Sur la présence du bacille d' Eberth dans le sang des typhiques."
25 Hemorrhagic Family Cholemia. A. Gilbert and P. Lereboullet.—"Note additionelle sur la cholémie familiale à forme hémorrhagique."
26 *Appendicitic Symptoms in Course of Certain Infectious Diseases. Simonin.—"Manifestations Appendiculaires au cours de quelques maladies infectieuses."

Presse Medicale (Paris), January 8 and 11.

27 *Antiquity of Rachitis. A. Delpeuch.—"De l'ancienneté du rachitisme. Preuves tirées de l'art antique et de la philologie."
28 *Re-education of the Trunk in Tabetics. G. Constensoux.—"La rééducation du tronc chez les tabétiques."
29 *Indications and Contra-indications for Treatment with Phosphoric Acid. A. Martinet.—"Indications et contre-indications de la médication phosphorique."
30 *Alterations in Liver from Renal Impermeability. A. Gouget.—"Des alterations hépatiques dues à l'imperméabilité rénale. Role de l'urée."
31 *To Separate the Urine from the Ureters Without Catheterization. G. Luys.—"La separation de l'urine des deux reins."

Semaine Medicale (Paris), January 8.

32 Surgical Treatment of Tuberculosis of the Testicle. F. Lejars.—"Chirurgie du testicule tuberculeux."

Berliner Klin. Wochenschrift, January 6.

33 Anomalies in the Thorax as a Predisposition to Pulmonary Phthisis and Emphysema. W. A. Freund.—"Thoraxanomalien als Praedisposition zu Lungen-Phthise und -Emphysem."
34 Antibodies Against the Bacteriolytic Immune Bodies of Cholera. R. Pfeiffer and E. Friedberger.—"Ueber Antikörper gegen die bacteriolytischen Immunkörper der Cholera."
35 *Investigation of the Blood of Consumptives. L. Appelbaum.—"Blutuntersuchungen an Phthisikern."
36 *Experimental Cholangitis of Autoinfectious Origin. H. Ehrlich and A. Stolz.—"Ueber experimentelle Cholangitis autoinfectiösen Ursprungs."

Centralblatt f. Chirurgie (Leipsic), January 11.

37 *Treatment of Sciatica. F. Hoelscher.—"Zur Behandlung der Ischias."

Deutsche Med. Wochenschrift (Leipsic), January 9 and 16.

38 *Food Value of Gelatin. H. Brat.—"Ueber die Bedeutung des Leims als Nährmittel und ein neues Nährpräparat, Gluton."
39 *Stain-Analysis of Prepared Foods. S. Weissbein.—"Ueber einige neuere Nährpräparate. Eine farbenanalytische Studie."
40 *Post-Dysenteric Affections. F. Haasler.—"Ueber Folgekrankungen der Ruhr."
41 Improvement for Stomach Tube. Z. Bychowsk.—"Eine kleine Verbesserung der Magensonde."
42 *Simple Test for Albumin. Z. Bychowsk.—"Eine einfache und empfindliche Eiweissprobe."
43 *Improvements in Light Generators for Phototherapy. N. R. Finsen, S. Bang and H. Strebel.—"Weitere Versuche mit Eisenelektroden." "Neue Lichtgeneratoren in der Therapie."
44 Results of Vital Blood-Staining. H. Rosin.—"Ergebnisse vitaler Blutfärbung."
45 Eclampsia Due to Enhanced Tendency to Convulsions in Pregnancy. L. Blumreich.—"Experimentelle und kritische Beitraege zur Eklampsiefrage."
46 *The Fundus of the Eye in General Diseases. M. Litten.—"Ueber den Zusammenhang zwischen Allgemeinerkrankungen und solchen des Augenhintergrundes."
17 Study of the Causal Agent of "Cabbage Hernia." Feinberg.—"Ueber den Erreger der krankhaften Auswüchse des Kohls."

Muenchener Med. Wochenschrift, January 14.

48 *Intestinal Tuberculosis and Amyloid Degeneration in 25 Years of Autopsies. F. W. Zahn.—"Zusammenstellung der im path. Inst. zu Genf während 25 Jahren zur Sektion gekommenen Tuberkulosefälle mit besonderer Berücksichtigung der Darmtuberkulose und Amyloidentartung."
49 *Relations Between Langerhans' Islands in the Pancreas and Diabetes. M. B. Schmidt.—"Ueber die Beziehung der Langerhans'schen Inseln des Pankreas zum Diabetes mellitus."
50 Pleuritic Adhesions and Allied Conditions from the Standpoint of Diascopic Diagnosis. v. Criegern.—"Ueber Pleurasynechie und verwandte Zustände vom Gesichtspunkte der diaskopischen Diagnostik."
51 Soxhlet's Sugar Food—A New Infant Food. Frucht.—"Soxhlet's Nährzucker.—Ein neues Kindernährmittel."
52 Study of Hysteria. P. Tesdorpf.—"Ueber die Wechselbeziehungen der körperlichen und psychischen Störungen bei Hysterie."
53 Graphic Tracings of the Pulse. A. Jaquet.—"Zur Technik der graphischen Pulsregistrirung."
54 Behring's Latest Theory in Regard to Diphtheria. F. Schanz.—"Zu Behring's neuester Diphtherietheorie."

Wiener Klin. Wochenschrift, January 16.

55 *Etiology of Acute Hemorrhagic Encephalitis. E. Sträussler.—"Zur Aetiologie der acuten hämorrhagischen Encephalitis."
56 *Experimental Tests of Jez's Antityphoid Extract. G. Marki.—"Exp. Untersuchungen ueber das Antityphusextract Jez's."
57 New Skull Perforator. O. Frankl.—"Ein neues trepanförmiges Schädelperforatorium."

Gazzetta degli Ospedali (Milan), January 5.

57 Laryngectomy. C. Nasi.—"Sulla laringectomia."
58 *Sero-therapy of Tuberculosis. E. Cioffi.—"Ancora della sieroterapia della tuberculosi."

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1. **Obstructive Jaundice.**—In the diagnosis of obstructive jaundice Mayo Robson considers the following causes must be taken into consideration: 1. Common duct cholelithiasis. 2. Chronic pancreatitis. 3. Simple stricture of the common duct. 4. Inflammatory adhesions causing pressure on or stenosis of the hepatic or common ducts. 5. Hydatid disease pressing on or discharging into the bile duct. 6. Gummata implicating the ducts. 7. Chronic catarrh. 8, 9, 10. Cancer of the common bile duct, pancreas or liver. 11. Cirrhosis of

the liver. 12. Other rare causes such as aneurysm of the hepatic artery or aorta, and other tumors of the liver, gall-bladder, pylorus, kidney, etc. In the first five causes surgery affords good prospects of cure. Medical treatment is advisable only for gummata or chronic catarrh of the bile duct, while malignant disease is not hopeful and all the remaining cases should depend according to circumstances on medical or surgical treatment. If the diagnosis is doubtful he thinks exploratory operation is advisable provided the general condition of the patient permits it. In malignant disease there are certainly two cases where operation can do no good. They are primary cancer of the liver and cancer of the head of the pancreas. However, in younger patients the operation should be seriously considered. In cases of suspected pancreatic cancer, which usually occurs later in life, chronic pancreatitis may only exist and be curable by drainage of the gall-bladder. As regards gallstones the two greatest causes of mortality are hemorrhage and shock and the next most serious, exhaustion and sepsis. Accidents such as heart disease, syncope, etc., may occur after any other operation. In his own experience of some 200 cases he finds a decided reduction of the mortality, especially in choledochotomies, where it has fallen nearly one-half. This he thinks is largely due, 1, to increased experience, accuracy and diagnosis and in the better selection of cases; 2, knowing when to stop after exploration; 3, by improving the technique of the operation by the preliminary and subsequent treatment; 4, increased practice enabling the operations to be accomplished in little over half the time they once required. In the free use of calcium chlorid the coagulating power of the blood can be modified, but it should be given at least two days before operation and longer with nutrient enemata for three or four days afterwards. Adhesions should be ligatured where possible and all the bleeding points in the parietes and inside the abdomen be clamped and ligatured, or if general oozing exists pressure by means of sterile gauze should be employed. For preventing shock the enveloping of the patient in cotton-wool, operating on a heated table, administering strychnin before beginning the operation, large normal saline enemata with or without drainage one-half hour before operating and immediately after, are the essential modes of treatment; the most important point perhaps is the cultivation of the habit of operating expeditiously, every minute's prolongation of the manipulation and of the anesthetic adds to the risk. Even the most complicated cases of choledochotomy should not occupy much longer than an hour and simple exploratory operation only ten or fifteen minutes. Exhaustion and heart failure are best met with rectal alimentation, judicious mouth-feeding as soon as the anesthetic sickness has ceased and the use of small doses of strychnin hypodermically is often called for. Regular all-around asepsis and the employment of gauze drainage where necessary and the careful removal of the infected bile to insure against sepsis are essential.

3. **Ophthalmic Work in the Army.**—After reviewing his experience with recruits, Grimshaw offers the following suggestions: "1. Do not admit more ametropes by still further lowering visual tests unless prepared to correct their vision. 2. The examination of such ametropes by ophthalmic experts (civilian or military) and their vision and correction to be recorded on their medical history sheets. Such action would be necessary not only to treat the 'scrimshanking and discharge' stages of a soldier's *folie circulaire*, but to render easy the replacement of broken or lost glasses. 3. Opticians to be officially appointed whose duty it would be to keep an exact record of glasses supplied, to check the regimental data. 4. The distribution of recruits according to their sight to branches of service not necessitating keen vision or otherwise. If the visual tests were lowered, it would be of paramount importance to separate the 'hewers of wood and drawers of water' from the soldier who proposes to become a good rifleman, cavalry man, or artillerist. 5. To support discipline, and to lessen the responsibility of medical officers by inflicting summary punishment—by courtmartial and under the certificate of the ophthalmic surgeon—on soldiers afflicted with *folie circulaire* of above type. 6. To encourage the correction of ametropia by granting spectacles to soldiers free of cost. I never could understand why free spectacles were given to South African invalids conditional on their discharge from the army. I should have thought that a non-discharge was a more rational condition. The War Office grants artificial teeth to men who are likely to become efficient soldiers and who are willing to remain in the army. Why not spectacles? 7. Official encouragement to R. A. Medical Corps officers to specially qualify themselves in ophthalmic work, such special qualification to be rewarded with corresponding increase of pay. 8. The appointment of civilian consultants in certain military centers or districts to coöperate with the R. A. M. C. officers as occasion demanded or rendered desirable. 9. Special arrangement to be made whereby spectacles lost or broken can be replaced, and for ensuring suitable glasses being always available on occasions of need. This applies specially to men abroad or on active service."

4. **Ruptured Tendo Achillis.**—Thomas gives his experience in the treatment of this condition on himself from an accident which occurred on shipboard. The splint applied by him was an aluminum spatula molded to the shape of the bend of the ankle, pushed into a very thick india-rubber tubing, which acted not only as padding, but also kept the splint in place by preventing the aluminum from moving downward under the bootlace. This was inserted under the lacing of the shoe and held in place by it. One of the essentials is that the shoe lace should be placed right around the lower part of the splint, because he finds that if the whole of it was in front of the splint the pressure on the back of the foot became intolerable. Massage was also kept up. The advantages of such a splint are its simplicity and efficiency; the patient can walk without any fear of getting the ankle flexed to a degree which would disturb the provisional callus. It answered the purpose in his case, enabling him to get around and leading to complete recovery. He thinks the treatment by early massage and walking in cases of ruptured Achilles tendon brings about a stronger union than is obtained by immediately suturing or the fixation of the limb by splints, because the call to provide sufficient reparative callus to bind the ruptured ends of the tendons is much greater during movement in the dependent position than it is during rest in an elevated or flexed position. He calls attention to the importance of the H-shaped bruise at the heel as a sign of rupture or division of the tendon.

5. **Cancer.**—Mason gives a series of statistics and observations which lead him to believe that cancer is due to some germ whose habitat is in the sewage contaminated subsoil and that its entrance into the organism is through one of the mucous-membrane lined apertures of the body. This will account for the following facts: "1. That the cancer death rate has increased during the last sixty years—a time synchronous with the development and extension of the water closet system of drainage, bearing in mind that the first style of water closet system was simply unglazed drain-pipes, laid end to end, sometimes joined with clay and sometimes without. I have even seen in old cancer houses drains made up of one brick laid flat, with two placed edgeways, and covered with slate running beneath the dwelling house. 2. That the infection of the alimentary system is as high as 55 per cent. For in those houses in which the drains are in such a faulty condition as to contaminate the subsoil, the food, which is often kept in the cellars, would be the first to become infected by any germ that might be existing in the subsoil, considering there is always an upward current of air out of the subsoil into any building upon which it is built. 3. That people over 40 years of age are more subject to it, as they become more confined to their dwelling as age advances. 4. That females are more subject to it than males, possibly on account of the domestic duties keeping them longer exposed to any poisonous influences that may thus arise. (Even the shape of the female garments would favor infection of the generative organs.) 5. That consecutive houses in the same street are found often to be cancer houses, as many of the houses were built at the same time and have a common drain and if it has been badly laid or for any reason becomes faulty the subsoil of several houses may become

sewage contaminated. (A great many of the cancer houses enumerated in this paper have been found to have old disused cesspools, old contaminated wells, or decayed brick sewers lying forgotten in the soil beneath the house.) 6. That a large percentage of these cancer houses (17 per cent.) are end houses of rows, corner houses of streets, or houses on either side of court entrances, as these are places where any defect in a drain would be most likely to be severely affected by sewage. 7. That the older houses are more subject to become cancerous than the modern ones, as the drains in the earlier days were not laid with the care they now are, that glazed pipes were not known and brick drains were often used and the drains were often run under the dwellings, which would after a time decay, become leaky, and thus contaminate the subsoil. 8. That the houses which are built on a porous subsoil, such as sandstone, gravel, etc., are more likely to become cancerous than those built on clay, though the latter in time will become saturated with sewage matter."

6. **Ocular Pain.**—Ocular pain is an invaluable symptom, as Dunn points out, and its absence in inflammatory conditions of the eye may be, as a rule, considered as a favorable sign. Very little pain occurs in connection with conjunctival affections, but the cornea is especially sensitive and this symptom may be a very important guide in suggesting corneal disease where the lesion is minute. In all cases of doubt the corneal surface should be carefully inspected through a lens. Photophobia is explained as due to exposure by minute ulceration, etc., of the corneal plexus. Iritis is not always accompanied with pain and the amount of pain is not always an indication of the severity of the attack, but when the inflammation extends to and involves the ciliary body a distinct tenderness of the globe on palpation is present. In the different forms of iritis the pain symptoms vary. In syphilitic iritis it is very variable, but generally persistent. In rheumatic iritis it is usually present in marked degree, but chiefly in the nighttime. In syphilitic iritis the pain when once relieved does not recur and the most effective treatment in the acute case is local abstraction of blood by means of leeches on the temple of the affected side. In the rheumatic form the pain is of neuralgic character, differing from the throbbing inflammatory type in syphilis and its subsidence is generally the first indication that the attack is passing off. Dry heat is the best application in this class and nothing acts so well as the old-fashioned bran poultice. Leeches are not necessary nor are sedative drugs. Pain in the atrophied globe implies the immediate necessity of enucleation whether there be danger of sympathetic ophthalmia or not. In glaucoma the pain is not due simply, he thinks, to stretching of the sclera, but he suggests that it is due to the compression to which the ciliary processes are subject during the attack, where the only treatment, of course, is iridectomy.

9. **Appendicitis.**—Battle has come to the conclusion from his later experience that the removal of the appendix is always advisable as a security against recurrences. He makes but one exception to the rule and that is when it is not possible or advisable to remove it when the abscess is opened because it has sloughed off and is left free in the pus or comes away.

10. **Izal.**—Summarizing his experience and observations with izal (one of the cresol preparations) Tunnicliffe remarks that "it may be said that so long as the individual differences in cases of phthisis remain so manifold so long must we greet any addition to our non-irritating antiseptics with thankfulness. Of the efficiency of carbonate of guaiacol in certain cases nobody with any experience of it can have any reasonable doubt. The expense, however, of a prolonged treatment with this drug in many cases absolutely contra-indicates it. In spite of many requests from the profession the makers have been unable to reduce materially its price. Some few years ago, in conjunction with Dr. T. H. Arnold Chaplin, the author introduced guaiacolate of piperidin in phthisis, but this, although possessing certain advantages, is also necessarily relatively expensive. In izal we appear to have a cheap and efficacious drug. The best results are to be obtained with it in cases of active pulmonary tuberculosis and of old cavities with abundant fetid expectoration. According to my experience it seems to exert a beneficial influence in cases in which diarrhea is present, whether this be due merely to decomposition of the intestinal contents or to actual tuberculous lesion of the intestine. In those cases in which the bronchitic element is well marked it is, as was *a priori* to be expected, less useful."

11. **Pernicious Anemia.**—McPhedran says the probable cause of pernicious anemia is a toxin of gastro-intestinal origin. In the largest proportion of cases, with few if any exceptions, there is at some time a history of diarrhea and vomiting. Hunter's theory of the dental origin is briefly mentioned and he has notes in 17 out of his 22 cases of the condition of the teeth. In nearly all they were too well cared for to be a possible source of infection to the stomach. He therefore discreunts this as a cause. In no case of the whole 22 was there any apparent cause evident. He calls attention to the fact that the disorder is not progressive but remittent. Many cases run a mild course, but remissions occur in nearly all. While arsenic has been discredited as a remedy in late years, the only case of complete recovery that he had was apparently due to its action. His experience with gastro-intestinal antiseptics has not been specially favorable. He has had some good results apparently from normal saline solution administered hypodermically, but the pain is a drawback. The rectal administration should be as effective, but is often barred by the diarrhea. In two cases there was some apparent benefit from antidiphtheric serum, but it was possibly a *post hoc* rather than a *propter hoc* result. In the more recent cases he has advised moderate purgation while internal intestinal antiseptics and general remedies as arsenic, strychnin, iron, etc., but the results have been also disappointing.

13. **School Hygiene.**—Tidey's article is interesting on account of the facts that he gives in regard to the schools of France, Italy, Belgium, Germany and Switzerland. He speaks very highly of the progress in Switzerland, as well as Belgium and Germany, while in Italy it is to some extent embarrassed by the antiquity of the buildings employed. In France he thinks even the more recent school buildings are not quite up to the mark.

21. **Treatment of Cancer.**—A communication to the Academy from Dr. Lucien Le Roy, of Paris, reports a case of cancer of the lung cured in a few days by the simultaneous administration of arsenic and quinin. The patient was a woman of 57, and he administered 50 cg. a day of hydro-chloro-sulphate of quinin taken at meal times, supplemented by the injection every other day of 5 cg. of sodium cacodylate. Observation of this patient and of another who had a cancer develop in a wen on the scalp, and the observation of others, have convinced him that the only chance of successful inoculation of animals with cancer is on the condition that the inoculation be made in a tissue previously inflamed or altered in its constitution, as in case of lupus or a tuberculous cavity in man. He is now carrying on experimental researches at the official veterinary college at Alford to test the truth of this assumption, assisted by two of the professors.

24. **Early Diagnosis of Typhoid Fever by Bacilli in Blood.**—Courmont examined the blood of nine patients with typhoid fever and found Eberth's bacillus in the blood in every case, sometimes as early as the fifth day of the disease. He had no opportunity to inspect the blood before the fifth day in any instance. He found that there was no apparent connection between the presence of the bacilli in the blood and the agglutinating reaction. He mixed 2 to 4 c.c. of freshly drawn blood with 300 to 500 c.c. of bouillon, shaking the fluid at the end of twenty-four hours if it was not already turbid. He found that the results were always positive with a large amount like this, while they proved negative in 79 per cent. of the control tests with only 20 c.c. of bouillon.

26. **Appendicitic Symptoms in the Course of Certain Infectious Diseases.**—Simonin investigated 506 patients in various infectious diseases and found symptoms on the part of the appendix in 6.33 per cent. of the cases of scarlet fever, 5

per cent. in mumps, 3.7 per cent. in erysipelas, and 2.37 per cent. in throat affections, averaging 3.63 per cent. of the total of 506 patients. When the appendix is sensitive to pressure for eight to ten days, the pain sharp and localized exactly at the spot, it can only be explained by a slight inflammatory reaction of the submucous follicles of the appendix, a latent catarrhal appendicitis.

27. **Antiquity of Rachitis.**—Delpeuch published a couple of years ago a historical study of gout and rheumatism through the ages. He had been making a similar study of rachitis just before his death. He found data in art and philology to convince him that rachitis could be traced back to the very dawn of civilization.

28. **Re-Education of the Trunk in Tabes.**—Constensoux has charge of the re-education of tabetic patients at the Salpêtrière, and states that each patient has to be carefully studied in order to learn which muscles are defective, to institute appropriate treatment. The most important part of the task is to train the muscles of the trunk to balance it on the legs. The legs are easily taught to resume their function but the re-education of the trunk is more difficult, and to this cause is due the failures of those physicians who have not derived benefit from systematic exercises to re-educate the muscles of their tabetic patients.

29. **Indications for Treatment with Phosphoric Acid.**—Martinet describes a number of cases to support his assertion that hypo-acidity of the urine, accompanied by an abnormally large amount of phosphates, is frequently the index of hyperchlorhydria in the stomach. On the other hand, hyperacidity of the urine and abnormally small proportion of phosphates suggest hypo-acidity in the stomach, with hypo-acid dyspepsia, stasis of the food, acid fermentation, etc. In such cases the administration of phosphoric acid may promote digestion and check the acid fermentations by its eupeptic and antiseptic action and by this means restore normal acidity to the urine, paradoxical as this may appear. When, therefore, the proportion of the acidity of the urine to the phosphoric acid is below 1/3, phosphoric acid is contra-indicated on account of the probability of gastric hyperchlorhydria. When the proportion is above 2/5, hypochlorhydric dyspepsia probably exists, with stagnation of the stomach contents and acid fermentations. In such cases phosphoric acid may render signal service.

30. **Alteration of the Liver from Renal Impermeability.**—Gouget reports that experimentation has confirmed the data of the clinic, as he illustrates, in detail, showing that the retention of the poisons of the urine causes certain alterations in the liver and that they are principally, if not exclusively, the work of the urea. The lesions in the liver induced by clinical and experimental uremia are identical with those produced by urea alone. The other organs are more or less affected, but the liver bears the brunt. The insufficiency of its multiple functions, especially of its antitoxic function, has a most important influence on the evolution of the uremia, similar to that of insufficiency of the kidneys in severe icterus. As urea is so little toxic in itself, Gouget is inclined to believe that the deleterious effects are due to the elevated molecular concentration of the plasma. In other words, they are not so much of a chemical as of a physical nature. Increase in the osmotic tension has been shown to be a factor in the genesis of disturbances resulting from impermeability of the kidneys. Voit and others have established the injurious action of the accumulation of even non-toxic substances in the blood. The identity of the symptoms induced in these latter experiments indicates a common origin for them, which may be the increased osmotic tension, from dehydration of the tissues, analogous to what happens in cholera. Gouget is engaged in further research to elucidate this point.

31. **To Separate the Urine from the Ureters.**—Luys has modified the Harris urine separator described in THE JOURNAL of Jan. 29, 1898, and submits his instrument as a simple and convenient method of obtaining the urine from each ureter separately, without catheterization. Harris' instrument is applied to the roof of the bladder, Luys' to the floor. It consists of two catheters with a metal piece between, the same size and shape as the outline of the catheters. There is a hole at the tip in which a fine chain is fastened and the whole is encased in a loose rubber sheath. The two catheters and the intermediate piece form one instrument when the handle is screwed on. It is inserted along the lower wall of the bladder, which it pushes along and against the flattened rectum. By pulling on the chain, the rubber sheath in the center is drawn up and stretched like a curtain, walling off the two sides of the bladder. As the urine drops from one ureter the suction of an exhaust bulb draws it into the perforations in the corresponding catheter, as in Harris' instrument, connected with a corresponding vial for the urine from each side. The rubber curtain extends upward and also presses against the floor of the bladder below so that no intermixture of the urine from the two ureters is possible.

35. **The Blood in Consumptives.**—Appelbaum states that the blood of a consumptive becomes altered when it is long under the toxic influence of the disease. The amount of hemoglobin diminishes, also the number of corpuscles, and the specific gravity drops. In the second stage of the disease there is liable to be a deceptive improvement—the composition of the blood returns apparently to normal. This is probably merely a concentration of the blood from the loss of water in the night sweats, diarrhea and copious salivary and bronchial secretions. This concentration of the blood is shown in the brighter red of the lips and cheeks. The third stage of phthisis is characterized by a leucocytosis. Neutrophile polynuclear cells form 84 to 86 per cent. of all the white corpuscles, and they are probably derived from the mononuclears. The appearance of numerous transitional forms in the blood heralds the approach of a polynuclear leucocytosis. The alterations in the blood in tall, thin, pale, predisposed subjects frequently long precede other physical or bacteriologic signs of incipient tuberculosis.

36. **Experimental Cholecystitis and Cholangitis.**—Ehret packed the gall-bladder with glass balls or wads of cotton in his experiments on eleven dogs. After an interval of apparent health the animals suddenly exhibited symptoms of cholecystitis or cholangitis. The infection was more severe and more constant in the experiments with the cotton wads. One or more of the wads worked down into the biliary passages. The germs causing the infection were probably of auto-infectious origin, derived from the intestines. These experiments show how a person can tolerate gallstones for a long time without symptoms, and suddenly violent infection may develop. They also show that foreign bodies cause less disturbance in the gall-bladder than when they are in the biliary passages. Violent suppurating infection followed in every instance the passage of a wad into the common bile duct, but the glass balls have remained in the gall-bladder without causing the slightest apparent disturbance in two of the dogs to date.

37. **Treatment of Sciatica.**—Hoelscher has been very successful in treating sciatica in the last ten years by applying a gauze tampon, impregnated with a 5 per cent. solution of carbolic acid, directly to the nerve. The cure is prompt and permanent. He has had only 2 recurrences in 15 cases thus treated, and in these patients the technique was not complete. He leaves the tampon for three or more days, suturing the wound partially over it, and protecting the vicinity by working a moist compress in around it. The patient was able to move his leg without pain as soon as he awoke from the chloroform narcosis, but although the sciatic pain was banished, the patients sometimes complained of pains in the knee or thigh for a few days or possibly some relics of the sciatic pain were experienced requiring renewal of the tampon. The wound healed with suppuration but no other complications were noted and all the pain was definitely abolished after the first few days. The nerve appeared sound to the eye, but in some cases adhesions between the muscles must have compressed the nerve against the bone when the limb was moved, which may have co-operated in the production of the sciatica. There was no spinal affection in any of the cases.

38. **Food Value of Gelatin.**—In order to thoroughly test the nutritional value of gelatin, Brat found it advisable to prepare it in some form which would not become solid as it cooled. He accomplished this by submitting gelatin for several hours to the action of acids at a high temperature. The acids were then neutralized and the dialyzed or filtered product was ground into a powder which he calls "gluton." It dissolves readily in water and does not harden even in cold, concentrated solutions. When added to fluid or solid food it alters the taste so little as to be imperceptible and makes palatable lemonades, etc. The metabolism in four patients at von Leyden's clinic was carefully watched during four to seven days before the gluton was administered and during a similar period during and after the tests. The results confirm Voit's assertions that of all the articles of food which contain nitrogen, gelatin is the one most completely consumed in the body. Experiments on animals corroborated the clinical experiences and indicate that this variety of gelatin is utilized the same as the ordinary kind. It may prove useful as a substitute for the carbohydrates in diabetes, obesity, etc., to assist in controlling hemorrhage and be especially valuable in all diseases requiring a fluid diet.

39. **Stain Analysis of Prepared Foods.**—Weissbein states that analysis by staining is an important means of determining the composition of foods, etc. It supplements and completes chemical analysis and clinical observation. All that is necessary is a centrifugalizer and microscope and either Ehrlich's or Pappenheim's panoptic triacid stain. The results of the stain show the exact proportion and kind of albumin in the preparation, whether it occurs in the form of an albuminate or nucleo-albuminate, whether the starch is unmodified or dextrinized, and whether gluten or less digestible particles are present. We learn also that a large percentage of nitrogen determined by chemical analysis does not always represent a high nutritional value and large proportion of albumin. The stain reveals also the presence of minute particles of the hulls and indigestible substances, which are frequently encased in indigestible cellulose.

40. **Post-Dysenteric Affections.**—Haasler's article is based on observation or dissection of hundreds of cases of dysentery (Ruhr) at Tientsin. Death was usually the result of the destruction of the mucous membrane of the intestines, the functional loss of almost the entire large intestine, or to various complications, especially hemorrhages and peritonitis. His experience indicates that injections should not be used during the ulcerating stage, or only with extreme caution. The site and multiplicity of dysenteric liver and spleen abscesses render them inoperable in most cases. The frequent participation of the appendix in the morbid process threatens appendicitis after recovery from the dysentery, and stenosis and kinking of the intestines are liable to follow later. Encapsulated abscesses may linger and prove the source of recurrence. The organs of respiration frequently participate also in the affection and pleurisy is common, but on the other hand, heart and kidney affections seldom develop as a post-dysenteric affection.

42. **Simple Bedside Test of Urine.**—Bychowsk states that even as little as one or two drops of urine will impart an opalescence to a glass of clean hot water in case of the presence of albumin. The glass must be held against a dark background, such as a black sleeve, and the opalescence spreads through the fluid as the glass is shaken, like the smoke from a cigar. The phosphates produce the same phenomenon, but error from this cause can be prevented by adding a few drops of acetic acid.

43. **Improved Light Generators for Phototherapy.**—Bang, Finsen and Strebel each contribute an article on this subject. Finsen endorses the great efficacy of Bang's metal electrode lamp, described in THE JOURNAL, xxxvii, p. 1073. It differs from all lamps hitherto constructed as the optic effect is disregarded and the ultra-violet rays are produced in exceptional abundance, but its effect does not penetrate beneath the surface. The lamp has a very powerful bactericidal action, killing a superficial culture of the staphylococcus in as many seconds as the arc light requires minutes. Although it is so effective and convenient for action on the surface, Finsen's apparatus still retains its supremacy for deep lesions. Finsen states that Bang's iron electrode generates actually a new kind of light and will probably aid in our better knowledge of the therapeutic action of light and specialize or differentiate the action of light in the treatment of skin diseases. Strebel describes improvements in his lamp, which is constructed somewhat on the same principle as Bang's, but generates blue and violet as well as ultra-violet rays and has thus both a superficial and a deep action. By a combination of a glass rod to conduct the light and a system of reflectors to reflect it into an endoscope tube, he is able to send the light into the male and female urethra and into the uterus.

46. **Diagnostic Value of Certain Alterations in the Eye in General Diseases.**—Litten some years ago called attention to white specks appearing close to the papilla which he had noticed in 80 per cent. of 35 cases of septicemia or malignant endocarditis, all fatal. Further experience has shown that the phenomenon occurs in only about 40 per cent. and that retrogression of the specks and recovery of the patient is possible. When it occurs it is extremely valuable for the differentiation of acute septicemia and malignant endocarditis in their early stages. The specks were always found in the same layer of the retina and at the same distance from the entering point of the optic nerve. They look like round or oval tumors imbedded in the layer of nerve fibers. They have no decided structure; they never break through into another layer of the retina; they form with great rapidity and may vanish without leaving a trace, and are probably a rapidly coagulating exudation of lymph. He has never found them except in cases of septicemia, leukemia, pernicious anemia and scorbutus, although he has sought for them with special care in typhoid fever, etc. In case of a differential diagnosis between septicemia and typhoid fever, therefore, their presence speaks for the former. Most cases of acute miliary tuberculosis can be differentiated by the tubercles in the choroid. In their absence it may be difficult to differentiate it from septicemia as the white specks do not always occur in the latter. Multiple hemorrhages in the fundus of the eye are observed in certain cases of either affection. If the lungs are entirely negative, the evidence is in favor of septicemia. These hemorrhages are also observed in some cases of tubercular meningitis, but there is almost always an accompanying papillitis, which Litten has never seen in septicemia. He has observed three cases of typhoid fever in which a large hemorrhage occurred in the retina with amaurotic symptoms, quite different from the small circumscribed hemorrhages observed in some cases of septicemia. In one of the cases the lesions retrogressed during recovery, but recurred again during a recurrence of the typhoid fever, which he was able to diagnose from the aspect of the eye alone, before the temperature curve or any other symptom differentiated the disease.

48. **Intestinal Tuberculosis and Amyloid Degeneration at Autopsies.**—Zahn has had sections made of the cadavers of consumptives during the last twenty-five years by his students at Geneva, and has paid special attention to primary and secondary intestinal tuberculosis and to amyloid degeneration. The Path. Institute had 6320 autopsies during this period and tuberculosis had been diagnosed in 2058 or 32.56 per cent. The majority were men. Primary intestinal tuberculosis was rarely found, but secondary infection of the intestines was noted in 63.21 per cent. of all ulcerative tuberculous lesions in the lungs, nearly twice as frequent in men as in women. He believes that this secondary infection in the intestines is due to the swallowing of infectious sputa, consciously or unconsciously during sleep. The question is, why do any escape? He attributes the immunity of the comparatively large number free from this complication, to the good functioning of their stomachs. He noted that gastric disturbances or lesions were common in the subjects with secondary intestinal infection. The anatomic lesions predominated in men, the functional in women. This insufficiency of the stomach allowed the tubercle bacilli to pass through the stomach unharmed and infect the

intestines. The conclusion imposes itself that the care of the stomach is one of the most important indications in tuberculosis to prevent this secondary infection. The coincidence of tuberculosis and carcinoma was noted in 3.69 per cent. of all the cases of tuberculosis, and of tuberculosis and sarcoma in 6 cases. Amyloid degeneration was observed in only 105 cases, that is, in 1.66 per cent. It occurred with florid tuberculosis in 98 cases; the lesions were in the lungs in 79 and in the bones in 19. It was found in 7 cases in which there had been no tuberculosis. This rarity of amyloid degeneration he attributes to the lack of extreme poverty in Geneva and its vicinity.

49. **Langerhans' Islands and Diabetes.**—Schmidt has examined the pancreas in 23 autopsies of diabetics. He found it intact in 8, and only slightly altered in 7. In one case the pancreas of a diabetic woman, 62 years of age, proved sound in every respect except the Langerhans' islands. They were nearly all in a state of hyaline degeneration. Opie has described a similar case. In the case of a child of 10 he found an almost isolated, acute interstitial inflammation of these islands. The child had exhibited 6.8 per cent. sugar. Two other cases belonged to the group of chronic interstitial pancreatitis, both of the intralobular or interacinous form, with sclerosis of the islands. In 2 other cases the islands seemed to be intact inside a fibrous capsule while the remainder of the pancreas was the seat of the morbid process. The islands seemed to be constantly regenerating, but whether the new-formed ones are as functionally capable as under normal conditions is open to question.

55. **Etiology of Acute Hemorrhagic Encephalitis.**—Sträussler describes 2 typical cases of this affection with the autopsies. He compares the findings with those observed by others in acute, fatal psychoses, and emphasizes the fact that the clinical picture is practically identical in all, and all were distinguished by coprostasis, and by symptoms indicating hyperemia of the brain and its membranes. The course of events indicated that the hyperemia was the consequence of the coprostasis, due to the toxic action of substances absorbed from the intestines. A number of writers have attributed acute mania to an acute, hemorrhagic encephalitis demonstrated at the autopsy. The connection between hemorrhagic diseases and intestinal auto-intoxication has been established beyond question. Disturbances in the alimentary canal are an almost constant accompaniment of encephalitis. Instances have been known of its succeeding to gastritis.

56. **Tests of Jez's Antityphoid Extract.**—Markl reports comparative tests of Jez's extract and of antityphoid serum on a hundred rabbits and guinea-pigs, more or less. He found that the serum of animals thus treated contained a specific protecting substance or substances not found in normal animals. Their action is anti-infectious, not antitoxic.

58. **Sero-therapy of Tuberculosis.**—Cioffi reports experiments with guinea-pigs, inoculating them with tuberculosis and then treating them with Maragliano's anti-tuberculosis serum. None of the animals thus treated died. He also describes several cases of patients so improved as to be practically cured. He points out that it is effective only against the tuberculosis and is contra-indicated in secondary infections.

Queries and Minor Notes.

PREGNANCY AND CONTRACTED PELVIS.

————, FLA., Jan. 23, 1902.

To the Editor:—Please tell me what is the right thing to do in the following case: Mrs. R. is two months pregnant, with contracted pelvis. A previous pregnancy was terminated by bringing on labor at the fifth month; it was found necessary to dismember the fetus and bring it away piecemeal. I have urged and insisted on waiting to term and then having a Cesarean section made with removal of ovaries and uterus. But both Mr. and Mrs. R. reject the idea as too dangerous and too expensive, as they are in straightened circumstances and are at a great distance from anyone I could recommend them to for so serious an operation. This is the first case in my twenty-one years' experience where I have been tempted to produce premature labor, or, rather, abortion, but the people are poor and there is no other physician within many miles at present. What is the right thing for me to do? If an abortion is performed now, it will doubtless mean a repetition of the same thing every few months, which, of course, I could not countenance. I have not used a pelvimeter, but the bony outlet of the pelvis is so contracted as to make a digital examination difficult.

ANS.—The case is evidently one of contraction of the pelvis of the highest degree, and therefore furnishes an absolute indication for Cesarean section if the pregnancy is allowed to continue. In the management of these cases there is some difference of opinion among authorities, some refusing to sanction any mutilating operation on a living fetus under any circumstances. The majority admit, however, that such operations are sometimes justifiable. If a woman comes to labor in ignorance of her pelvic deformity it may be admitted that she and her husband have some right to decide whether she shall be subjected to a more dangerous operation for the sake of the child, or whether the child shall be destroyed to avoid the risk of a section. In such a case if the woman is in no danger from infection and the child is still in good condition, Cesarean section is indicated. If, on account of a neglected labor, the woman is in danger of infection or the child undoubtedly weakened as a result of the uterine contractions, there is more reason to perforate and remove the child. The case in question, however, undoubtedly differs from those just alluded to in the fact that this patient became pregnant a second time after she knew from her previous experience, and also undoubtedly from the counsel of her physician, that she could not bear a living child. Her right to a choice in the conduct of the case is undoubtedly much lessened thereby. When a patient presents herself, no matter what the previous history, she must be given the best advice and treatment. Sometimes this is not accepted, and we must be content with an alternative. There is no doubt, however, that the management you suggested is proper, and it should be urged with all possible force. There should be practically no risk in the operation, because it would be provided for beforehand, and done with all possible care. It would be a less dangerous operation than the great majority of the hundreds of laparotomies that are done every day. This fact should be impressed upon the minds of the woman and her husband. It should be possible to meet the expense of such an operation. The woman should go to a hospital where she could have the gratuitous services of a competent abdominal surgeon. Transportation for even two or three hundred miles with a moderate hospital fee would be but little more than ought to be paid for inducing abortion at her home. Forcible presentation of all the advantages of Cesarean section, removal of groundless fears and objections, presentation of the danger of inducing abortion and of future danger to which the woman would be subjected through probable future pregnancies, should lead to a right decision in the case. Finally, abortion should not be resorted to without first calling in consultation.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A MANUAL OF PRACTICAL ANATOMY. By the late Alfred W. Hughes, M.B., M.C. Edin., F.R.C.S. Edin., etc., Professor of Anatomy, King's College, London. Edited and completed by Arthur Keith, M.D. Aberd., F.R.C.S. Eng., Lecturer on Anatomy, London Hospital Medical College, etc. In Three Parts. Part I. The Upper and Lower Extremities. Illustrated by 38 Colored Plates and 116 Figures in the Text. Cloth. Price, $3.00 net. Philadelphia: P. Blakiston's Son & Co. 1901.

A MANUAL OF CLINICAL DIAGNOSIS BY MEANS OF MICROSCOPICAL AND CHEMICAL METHODS FOR STUDENTS, HOSPITAL PHYSICIANS AND PRACTITIONERS. By Charles E. Simon, M.D., author of Simon's Physiological Chemistry, etc. New (4th) Edition, Thoroughly Revised and Enlarged. In One Handsome Octavo Volume of 608 Pages, Illustrated with 139 Engravings and 19 Plates in Colors. Cloth. Price, $3.75 net. Philadelphia and New York: Lea Brothers & Co. 1902.

A GUIDE TO THE MICROSCOPIC EXAMINATION OF THE EYE. By Prof. R. Greeff, Surgeon to the Ophthalmic Department of the Royal Charité Hospital, Berlin. Translated from the Second German Edition by Hugh Walker, M.A., M.B., C.M., Assistant Surgeon and Pathologist to the Ophthalmic Department of the Glasgow Royal Infirmary. Cloth. Pp. 171. Price, $1.25. Philadelphia: P. Blakiston's Son & Co. 1902.

A RETROSPECT OF SURGERY DURING THE PAST CENTURY, Being the Hunterian Oration of the Hunterian Society, 1901. By John Poland, F.R.C.S., Surgeon to the City Orthopedic Hospital. Cloth. Pp. 97. London: Smith, Elder & Co. 1901.

TRANSACTIONS OF THE TWELFTH ANNUAL MEETING OF THE MEDICAL SOCIETY OF THE STATE OF WASHINGTON, Held at Seattle, June 18, 19, 20, 1901. Cloth. Pp. 259. Spokane: Shaw & Borden Co. 1901.

ROUGH NOTES ON REMEDIES. By Wm. Murray, M.D., F.R.C.P. Lond., Newcastle-on-Tyne. Fourth Edition. Cloth. Pp. 176. Price, $1.25. Philadelphia: P. Blakiston's Son & Co. 1901.

THE SOCIETY OF THE LYING-IN HOSPITAL OF THE CITY OF NEW YORK. Annual Report of 103d Year, from October 1, 1900, to Sep-

tember 30, 1901. Paper. Pp. 126. Printed by Order of the Board of Governors.

TRANSACTIONS OF THE THIRD ANNUAL SESSION OF THE TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA, Held at the Jefferson Hotel, Richmond, Va., Feb. 26 and 27, 1901. Cloth. Pp. 237. Raleigh: Edwards & Broughton. 1901.

THIRTY-FIRST ANNUAL REPORT OF THE CENTRAL STATE HOSPITAL OF VIRGINIA (Petersburg, Va.), for the Fiscal Year Ending Sept. 30, 1901. Paper. Pp. 126. Richmond: O. E. Flanhart Printing Co. 1901.

A CHART OF DISEASES OF THE LUNGS, PLEURAE, BRONCHI, TRACHEA AND LARYNX. By Edward C. Hill, M.D. Published by the McArthur Hypophosphite Co., Ansonia, Conn.

TRANSACTIONS OF THE BERKS COUNTY MEDICAL SOCIETY, for the Year 1901. Volume VI. Paper. Pp. 99. Reading, Pa.: Norton Printing House. 1901.

SUMMARY OF THE ANNUAL REPORT of the Library Committee of the College of Physicians of Philadelphia, for the Year 1901. Paper. Pp. 4.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., January 16 to 22, 1902, inclusive:

Amos W. Barber, contract surgeon, member of a board at Fort D. A. Russell, Wyo., to examine officers of the Army for promotion.

Edmund Barry, contract surgeon, from duty at the General Hospital, Presidio of San Francisco, Cal., to Fort Dade, Fla., for duty at that post.

James R. Church, lieutenant and asst.-surgeon, U. S. A., on the expiration of his present sick leave, to report for duty to the commanding officer of the General Hospital, at Washington Barracks, D. C.

Walter Cox, lieutenant, asst.-surgeon, U. S. A., from the Division of the Philippines to San Francisco, Cal., whence he will report by telegraph to the Surgeon-General of the Army for instructions.

Louis W. Crampton, major and surgeon, U. S. A., leave of absence for two months granted, on the expiration of which he will report for duty at Fort Adams, R. I.

William F. Lewis, captain and asst.-surgeon, U. S. A., member of a board at Fort D. A. Russell, Wyo., to examine officers of the Army for promotion.

Walter D. McCaw, major and surgeon, U. S. A., leave of absence for one month granted, on the expiration of which he will report for duty at Fort Wadsworth, N. Y.

Edward W. Pinkham, lieutenant, asst.-surgeon, U. S. A., leave of absence for three months, with permission to go beyond sea, granted.

Irving W. Rand, captain, asst.-surgeon, U. S. A., from Fort Trumbull, Conn., to duty at Fort Hamilton, N. Y.

Edwin W. Rich, lieutenant and asst.-surgeon, U. S. A., from Fort Totten, N. Y., to San Francisco, Cal., en route for service in the Division of the Philippines.

Joseph L. Sanford, contract surgeon, from Clifton, Va., to San Francisco, Cal., en route for assignment in the Division of the Philippines.

Joseph J. Shafer, contract surgeon, from Fort Dade, Fla., to his home, Atlanta, Ga., for annulment of contract.

Herbert M. Smith, lieutenant and asst.-surgeon, U. S. A., from Fort Leavenworth, Kan., to San Francisco, Cal., en route for assignment in the Division of the Philippines.

Guy Stone, contract surgeon, from temporary duty at the General Hospital, Presidio of San Francisco, Cal., to his home, Nashville, Tenn., for annulment of contract.

Harry H. Van Kirk, contract surgeon, now at Sunbury, Ohio, is relieved from further duty in the Division of the Philippines and will proceed to Fort Leavenworth, Kan., for duty.

Walter D. Webb, lieutenant and asst.-surgeon, U. S. A., relieved from further duty in the Division of the Philippines and assigned to duty at Fort Totten, N. Y.

Marlborough C. Wyeth, major and surgeon, U. S. A., from the medical supply depot, Havana, Cuba, to duty at Fort Trumbull, Conn.

Appointments, Promotions, Retirements, Etc.,

of medical officers recorded in the Adjutant-General's Office, Washington, D. C., between Dec. 15, 1901, and Jan. 15, 1902:

Regular Army, Retirements—Colonel Dallas Bache, asst. surgeon-general, Jan. 1, 1902, at his own request, after forty years' service, act of June 30, 1882. Colonel Charles R. Greenleaf, asst. surgeon-general, Jan. 1, 1902, by operation of law, act of June 30, 1882.

Volunteers, Honorably Discharged—Major William F. Lippitt, Jr., surgeon, Dec. 31, 1901. Captain Vernon J. Hooper, asst.-surgeon, Dec. 31, 1901.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ended January 25:

Surgeon D. O. Lewis, ordered to the *Pensacola*.

P. A. Surgeon J. E. Page, detached from the *Pensacola*, and ordered to be ready for sea duty.

Rear Admiral W. K. Van Reypen, Surgeon-General of the Navy, retired from active service, January 25, upon his own application, after 40 years' service; with the rank and three-fourths the sea pay of the next higher grade.

Medical Inspector W. A. McClurg, ordered to the *Olympia*, January 25.

P. A. Surgeon E. O. Huntington, commissioned P. A. Surgeon from May 24, 1901.

P. A. Surgeon J. B. Dennis, commissioned P. A. Surgeon from May 25, 1901.

Asst.-Surgeon E. G. Parker, ordered to the *Pensacola*.

Asst.-Surgeon U. R. Webb, detached from the *Pensacola*, and ordered to the Asiatic Station, sailing from San Francisco, February 7.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ended Jan. 23, 1902:

Surgeon S. D. Brooks, to proceed to Bath, Maine, for special temporary duty.

Surgeon G. M. Magruder, granted thirty days' leave of absence, on account of sickness, from January 22.

P. A. Surgeon A. R. Thomas, to proceed to Liverpool, England, for special temporary duty.

Asst.-Surgeon J. F. Anderson, upon expiration of leave of absence, to proceed to Washington, D. C., and report to the Director of the Hygienic Laboratory for duty.

A. A. Surgeon Felix Garcia, granted leave of absence for 30 days from January 25.

Hospital Steward G. C. Allen, granted leave of absence for two days from January 27.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended January 25, 1902:

SMALLPOX—UNITED STATES.

California: Los Angeles, Jan. 4-11, 11 cases; San Francisco, Dec. 29-Jan. 12, 10 cases.

Illinois: Belleville, Jan. 11-18, 8 cases; Chicago, Jan. 4-18, 14 cases, 1 death; Freeport, Jan. 4-11, 2 cases; Galesburg, Jan. 11-18, 2 cases.

Indiana: Evansville, Jan. 4-18, 6 cases.

Iowa: Clinton, Jan. 11-18, 3 cases; Ottumwa, Nov. 30-Dec. 28, 79 cases.

Kansas: Wichita, Jan. 11-13, 1 case.

Kentucky: Lexington, Jan. 4-11, 3 cases.

Louisiana: New Orleans, Jan. 4-18, 5 cases, 3 deaths.

Maine: Portland, Jan. 11-18, 2 cases.

Massachusetts: Boston, Jan. 4-18, 76 cases, 9 deaths; Brockton, Jan. 11-18, 1 case; Brookline, Jan. 11-18, 1 case; Cambridge, Jan. 4-11, 3 cases, 1 death; Clinton, Jan. 4-11, 3 cases; Holyoke, Jan. 11-18, 1 case; Lowell, Jan. 11-18, 1 case; Marlboro, Jan. 4-11, 1 case; Medford, Jan. 4-11, 1 case; Quincy, Jan. 4-11, 1 case; Somerville, Jan. 4-11, 2 cases, 1 death; Weymouth, Jan. 4-11, 1 case.

Michigan: Ann Arbor, Dec. 28-Jan. 4, 2 cases; Detroit, Jan. 4-16, 4 cases, 1 death; Grand Rapids, Jan. 11-18, 2 cases.

Minnesota: Winona, Dec. 28-Jan. 4, 1 case.

Nebraska: Omaha, Jan. 4-11, 41 cases; South Omaha, Dec. 1-Jan. 18, 216 cases.

New Hampshire: Nashua, Jan. 4-18, 2 cases.

New Jersey: Camden, Jan. 4-18, 31 cases, 6 deaths; Jersey City, Dec. 29-Jan 19, 43 cases; Newark, Jan. 4-16, 68 cases, 12 deaths; Passaic, Jan. 4-11, 2 cases, 1 death; Plainfield, Jan. 11-18, 4 cases.

New York: Binghampton, Jan. 4-18, 1 case, 1 death; Mount Vernon, Jan. 11-18, 1 case, 1 death; New York, Jan. 4-18, 48 cases, 8 deaths.

Ohio: Cincinnati, Jan. 4-17, 27 cases; Cleveland, Jan. 4-18, 4 cases; Dayton, Jan. 11-18, 1 case; Hamilton, Jan. 11-18, 1 case; Toledo, Jan. 4-18, 4 cases; Youngstown, Dec. 28-Jan. 18, 30 cases, 4 deaths.

Pennsylvania: Allegheny, Jan. 4-11, 1 case; Altoona, Dec. 28-Jan. 4, 4 cases; Lebanon, Jan. 4-11, 1 death; Norristown, Jan. 4-11, 10 cases, 1 death; Philadelphia, Jan. 4-11, 213 cases, 31 deaths; Pittsburg, Jan. 11-19, 4 cases.

Rhode Island: Providence, Jan. 12-18, 1 case.

South Carolina: Greenville, Jan. 4-11, 1 case.

Tennessee: Memphis, Jan. 4-18, 11 cases.

Utah: Salt Lake City, Jan. 11-18, 1 case.

Vermont: Burlington, Jan. 4-11, 38 cases.

Washington: Tacoma, Dec. 29-Jan. 12, 12 cases.

Wisconsin: Green Bay, Jan. 4-18, 25 cases; Milwaukee, Jan. 4-18, 3 cases.

SMALLPOX—FOREIGN.

Africa: Monrovia, Dec. 7-14, 1 case.

Austria: Prague, Dec. 14-28, 12 cases.

Brazil: Rio de Janeiro, Dec. 7-22, 77 deaths.

Canada: Halifax, Jan. 4-11, 12 cases; Quebec, Jan. 4-18, 110 cases, 1 death; St. John, Dec. 28-Jan. 18, 3 deaths.

Colombia: Panama, Dec. 23-Jan. 13, 48 cases.

France: Lyons, Dec. 21-28, 1 death; Paris, Dec. 21-Jan. 4, 7 deaths.

Great Britain: Glasgow, Dec. 27-Jan. 10, 31 cases; Liverpool, Dec. 21-Jan. 4, 5 cases; London, Dec. 21-Jan. 4, 1419 cases, 68 deaths; Newcastle-on-Tyne, Dec. 21-28, 1 case; Sheffield, Dec. 21-28, 1 case.

India: Karachi, Dec. 8-15, 6 cases, 2 deaths.

Italy: Naples, Dec. 21-28, 32 cases, 2 deaths.

Russia: Moscow, Dec. 7-21, 34 cases, 12 deaths; Odessa, Dec. 14-28, 11 cases, 2 deaths; St. Petersburg, Dec. 14-28, 11 cases, 4 deaths; Warsaw, Dec. 14-21, 5 deaths.

Spain: Barcelona, Dec. 24-31, 3 deaths; Corunna, Dec. 21-Jan. 4, 2 deaths; Vigo, Dec. 1-31, 1 death.

YELLOW FEVER.

Brazil: Rio de Janeiro, Dec. 8-22, 2 deaths.

Mexico: Vera Cruz, Dec. 28-Jan. 18, 8 cases, 5 deaths.

CHOLERA.

India: Bombay, Dec. 10-17, 2 deaths; Calcutta, Dec. 7-14, 36 deaths; Madras, Dec. 7-13, 5 deaths.

Java: Batavia, Nov. 30-Dec. 7, 10 cases, 4 deaths.

PLAGUE.

Brazil: Rio de Janeiro, Dec. 7-22, 13 deaths.

China: Hongkong, Dec. 7-14, 1 case, 1 death.

India: Bombay, Dec. 14-17, 144 deaths; Calcutta, Dec. 7-14, 24 deaths; Karachi, Dec. 8-15, 81 cases, 56 deaths.

Turkey: Smyrna, Dec. 28, 1 case.